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Bogalusa Paper Co. to Install New Equipment

Improvements Costing Approximately $1,250,000 Will Consist of New Type Recovery Units, Additional High Pressure Boiler Equipment In Power House, One Turbo-Generator, Pulp Refining Machinery, Lime Burning Equipment, Etc.—Two of Six Paper Machines Will Be Rebuilt to Make New and Improved Type of Board

BOGALUSA, La., September 16, 1932—C. W. Goodyear, vice-president of the Great Southern Lumber Company, Bogalusa, La., announces that its subsidiary company, the Bogalusa Paper Company, Inc., would proceed to install new equipment and improvements to the extent of $1,250,000.

These improvements will consist of new type recovery units, which will permit taking advantage of waste heat for generating steam and the saving of chemicals; additional high pressure boiler equipment in the power house; one 7,500 k.v.a. turbo-generator; lime burning equipment; stock save-all and water storage; additional pulp washing and thickening equipment; machinery for refining of pulp, and rebuilding of two of the six paper machines to make a new and improved type of board.

Consulting Engineers Retained

The United Engineers and Constructors, Inc., of Philadelphia, Pa., have been retained as consulting engineers, and they have been working on plans for the last several months on new and original designs, which are somewhat of a departure from regular sulphate mill practice.

Contracts Already Let

Contracts have already been let to the Westinghouse Electric and Manufacturing Company, Pittsburgh, Pa., for the turbo-generator; the Babcock & Wilcox Company, New York, for boilers; Mount Chemical Equipment Company, Lynchburg, Va., for lime burning equipment, and the Dorr Company, New York, for water and stock save-all system. Contracts and orders for the balance of the equipment are to be placed shortly.

Will Effect Economies

The owners of the property, confident in the future prosperity of the country, feel that now is the time to proceed with these improvements in order to effect economies in manufacture, to conserve natural resources, and to do their part to stimulate business.

Operating at Full Capacity

The Bogalusa Paper Company is operating at full capacity and has been all of this year. It manufactures kraft wrapping and bag papers, container board and specialties. Bogalusa products are well known the country over.

These improvements will be completed within six months.

A. Suter, general superintendent, under the direction of M. E. Cody, general manager, is in charge of these improvements, and is responsible for the development of these changes.

Kraft Liner Board Prices Increased

The Southern Kraft Corporation, a division of the International Paper Company, announces a minimum advance of $2.50 per ton on kraft liner board prices. On account of the recent competitive situation in some markets the advance will be more pronounced in those territories. This marks the first advance in container board prices in more than eighteen months.

Southern kraft liner board manufacturers are running 100 per cent capacity due to the increasing demand for their product. Because of minimum stocks in the hands of container manufacturers it is expected that the advance will be reflected promptly in shipping container prices.

The container industry is a barometer of general business conditions, as its products are used in practically all lines of manufacture and distribution such as food products, clothing, automobile accessories, tobacco products, drugs, glassware, electric appliances, radios, etc.

The total annual output of container board is in excess of two million tons and the value of merchandise shipped in fiber board containers is several billions dollars.

Union Bag Reports Increased Orders

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., September 26, 1932.—An increased volume of orders at the bag factory of the Union Bag and Paper Corporation has resulted in the adoption of a night shift until further notice. The plant is now running five nights weekly and officials claim that production for this month is exceptionally heavy. The local plant has recently filled an order for 296,000 cellophane bags and it is said that orders have been received for 52 carloads of bags. With the plant now being operated at full capacity it is expected that good conditions will prevail for some time and the increased activity will probably necessitate enlargement of the force.

J. A. Kimberly Memorial Dedicated at Appleton

While Taking Part In Simple But Impressive Ceremonies, His Son, J. C. Kimberly, Perpetuates Memory of Dominant Figure In Paper Industry by Presenting Memorial Library, Costing $100,000, to Institute of Paper Chemistry, Lawrence College

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 26, 1932.—The memory of the late J. A. Kimberly, pioneer and dominant figure in the paper industry, will be perpetuated through simple but impressive ceremonies occurring at Appleton, Wis., on Wednesday of last week, when his son, J. C. Kimberly, presented to the Institute of Paper Chemistry of Lawrence College the J. A. Kimberly Memorial, a building costing $100,000 which is destined to make an outstanding contribution in the future to the manufacture of paper.

More than one hundred men from all parts of the country who are prominent in the industry were present to witness the ceremonies and attend the social functions in connection with the dedication. The program was opened in the morning with a joint convocation of Lawrence College and the Institute of Paper Chemistry. Dr. Henry Merritt Wriston, president of the college, said in an address at that gathering:

Dr. Wriston Speaks

"It is peculiarly appropriate that we should make such a combination. Eighty years ago a boy from Neenah, Wisconsin, paid his tuition and signed the register as J. Alfred Kimberly and enrolled at Lawrence University. He became one of the leading industrialists of this state and served the college for some years as a trustee. Afterward his son succeeded him to a place on the board.

"Today we dedicate a building erected in honor of this student of the earliest days of the pioneer institution. Architecturally the new building has the same feeling that may be found in old Main Hall whose rise from the ground, with stones pulled from the river, he watched. The new building represents the scientific progress of a great industry toward the development of which he made great contributions by the application of his energy, his intelligence, and his appreciation of scientific work. It is the first time that a building has been erected on our campus in honor of a former student."

At noon the visitors were entertained at a luncheon at the North Shore Country club. Services were begun at the Institute in the afternoon. Keys to the building were presented by J. C. Kimberly to Ernst Mahler, vice-president of the Kimberly-Clark Corporation, who is president of the Institute's board of trustees.

In a brief address, Mr. Kimberly said a wrong impression prevails concerning the purpose of the Institute of Paper Chemistry. The true object is to improve not only the paper industry but allied industries and to educate men so the industry as a whole may benefit. The scope of its influence is appreciated when one glances over the names of firms who have enrolled men here to gain greater scientific knowledge to help solve the problems of their industries. Among this group are the Du Pont Company, New Jersey Zinc Company, Rohan-Haase Company, Masonite Company, Stein-Hall Company, the Writing Paper Manufacturers Association, Bausch & Lomb Optical Company, and others.

KIMBERLY MEMORIAL

"We want to interest every paper manufacturer and want all industries to come in and become a part of this Institute," said Mr. Kimberly. "It was the broad vision of one man that is responsible for this splendid institution. Ernst Mahler, president of the board of trustees of this Institute. He visualized the possibilities and started the Institute with nothing but his faith. He knew the character of the work he introduced would be the greatest thing in this field the country could enjoy. He had the whole-hearted support of Dr. Henry Merritt Wriston, and I hope this institution will be a lasting memory to their names.

"It is indeed a pleasure for Mrs. Kimberly and me to turn over to you, Mr. Mahler, as president of the Institute of paper chemistry, the keys to this building in memory of my father, J. A. Kimberly, and we hope his high ideals, integrity and sincerity will be carried on."

In acceptance of the building, Mr. Mahler said in part:

Ernst Mahler's Address

"It is not the ambition of the Institute of Paper Chemistry to be large. We have pursued a rigidly selective policy, taking only fifteen new students this year from among two-hundred applicants. Our purpose is to develop a graduate school centered around one coherent purpose. There has been a strong tendency in recent years for graduate schools to become so big that they are unmanageable, and the minds of the staff and students are distracted by the multitudes of diverse aims and objectives. It is our conviction that there is a unique place in American education and in American industry for a small, compact, perfectly equipped and thoroughly organized graduate school, where every individual, whether trustee or staff member or student, is thinking in common terms about a great industry.

"A year ago it was my privilege and pleasure to accept the first building of the Institute of Paper Chemistry in behalf of its board of trustees. So again today, I feel highly honored in receiving from Mr. Kimberly the key to the J. A. Kimberly Memorial Library, given in memory of one of the industry's greatest pioneers by his son, J. C. Kimberly, a true believer that the scientific education of those who want to be leaders of our industry must be properly provided for. This library not only stands as an inspiration to those who are going to benefit by it, but to all who are interested in higher education and in the welfare of the pulp and paper industry.

"Erected during the world's greatest economic crisis,

this building shall always be a monument to J. C. Kimberly's courage and farseeing ideals. As a place for study, reference, realization and rest, it shall serve the noble purpose for which it has been intended."

A reception for Mr. and Mrs. Kimberly followed the exercises and was held at the building. A public inspection was also conducted.

J. A. Kimberly was a pioneer paper manufacturer in the Fox River Valley, center of the industry in the middle west. He was one of the founders of the Kimberly-Clark Corporation, with mills at Neenah, Kimberly and Niagara, Wis., and at Niagara Falls, N. Y. He was president of the company for fifty-six years, and died in 1928. His son, J. C. Kimberly, is president of the Neenah Paper Company, Neenah, Wis.

Hereafter the $250,000 main building, completed last year, will house all the work in pulp and paper technology and in cellulose chemistry. The work in colloid chemistry and optics will be centered in the new building. Offices and classrooms and the museum are located in the main building, while the library occupies the entire main floor of the new Kimberly Memorial. The main building also houses a complete miniature plant for the manufacture of pulp through various methods. This plant is also used in experimenting with new methods of pulp making.

Equipment of New Building

The exterior construction of the Kimberly Memorial is of Lannon stone. A contrast is furnished by following somewhat the design of early Colonial buildings. The first floor is beautifully panelled in antique pine. It contains the main library reading room, recreational reading room, librarians office and stack room. The colonial spirit has been followed in furnishing these rooms.

On the second floor are found the laboratories in colloid chemistry and wood technology and the office and laboratory of the professor of colloid chemistry.

In the basement are three dark rooms and a large laboratory in which a number of the more sensitive optical instruments will be permanently housed. Other rooms in the basement include a librarian's work room, research reading room, women's rest room and kitchenette.

Because of the importance of research work involved in the studies of students of the Institute, the library is of parallel significance to the laboratory. It is believed by officials that the Institute has succeeded in building what probably is the finest library on this subject on the American continent and it probably equals any in the world. Almost a hundred periodicals of importance to the pulp and paper industry are received at the library, printed in many languages. The library prepares bibliographies of material upon significant phases of the industry's problems and these abstracts and bibliographies are printed in the monthly bulletin of the Institute library. The library also has several thousand books on subjects related to the industry.

J. C. KIMBERLY

DR. HENRY M. WRISTON

Officers of the Institute

Officers of the Institute include: President, Ernst Mahler, vice-president of the Kimberly-Clark Corporation; vice-president, D. C. Everest, vice-president of the Marathon Paper Mills Company; secretary, Dr. Henry Merritt Wriston, president of Lawrence College; executive secretary, Westbrook Steele; treasurer, Ralph J. Watts, business manager of Lawrence College; additional trustees, M. A. Wertheimer, president of Thilmany Pulp and Paper Company, D. K. Brown, first vice-president of Neenah Paper Company, and Hugh Strange, secretary-treasurer of John Strange Paper Company.

The activities concluded with an open meeting in the evening of the Northeastern Section of the American Chemical Society. An address was given by Dr. Harold Hibbert, professor of Industrial and Cellulose Chemistry of McGill University, Montreal. His subject was "The Structure of Cellulose and the Nature of Plant Synthesis."

Paper Mills Fight Tariff Charges

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 26, 1932—Paper mills are assisting the fight to prevent imposition of a double increase of emergency charges on Lake cargo coal moving over Lake Michigan to Wisconsin docks. The Interstate Commerce Commission prescribed an emergency charge of six cents per net ton on coal in the fifteen per cent freight rate increase but left the adjustment of such a charge on Lake coal to shippers and railroads. A charge of nine cents per net ton is being levied on ex-lake coal to Wisconsin, and twelve cents to other adjoining states. Eastern lines add the six cent charge to the tariffs for the haul from the mines to the lower lake ports and western roads add an additional six cents for the haul from the west bank lake docks. Reparation is asked for past double charges as well as settlement of the problem for the future.

Brighter Outlook for Paper Trade In Toronto

Volume of Inquiries Received for Future Needs Indicates Good Business During Closing Months of Year—Demand for Writing, Ledger, and Bond Papers Slightly Better—Activities of Ontario Paper Manufacturers Generally Increased

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., September 26, 1932—The general experience among the paper merchants is that inquiries for stock are coming in at a rate which presages good business as the fall advances. A few lines of paper are already selling better, although it must be said that orders are of the small variety and are still in the hand-to-mouth class. Printers report that there is quite a lot of work in the offing and that when this materializes, as it is expected to do within the next few weeks, there will be some nice business for the paper wholesalers. Meanwhile the larger printing plants are reporting slightly greater activity, although most of the smaller plants are still running very light. Compared with normal times, however, orders are light, for the volume of direct mail and other advertising is down and many catalogs have been reduced in size. Then there is still the tendency of the buyer of printing and paper to demand the cheaper grades of paper, which tends to keep down the value of total sales. When the point is reached where consumers feel they can afford to pay for the better classes of paper the wholesale paper trade will be in a good position, for it is felt that the greater number of inquiries coming in now is the prelude to decidedly better business in the near future.

As far as the manufacturing end of the pulp and paper trade is concerned it would appear as if there was slightly increased activity, although this is hardly observable on the surface as yet. Manufacturers of writing, bonds and ledgers are reporting a slightly better demand and some weeks have seen some really good business booked. But the market generally is spotty and cannot be depended upon to yield satisfactory orders longer than a week at a time. For instance the coated paper mills booked good business at the middle of September but there was a quick reaction and sales just now are light. Book paper and offset papers are enjoying fairly good sales and these have found their origin in the east and west, as well as in the central provinces of the Dominion. With good crops and a general feeling of optimism throughout the Canadian west there is reason to feel that paper mills will be placing some good tonnages west of Winnipeg to the coast before the fall months end.

In other departments of paper manufacturing operations generally are light. Light weight papers, which for the most part have enjoyed moderate prosperity up until a few months ago, are still quiet, with only a light demand being experienced for tissues, toilets and specialty lines. The paper converting trade, also, continues quiet, although now that general business in Ontario is showing some signs of improvement, there should be an early increased call for envelopes, business forms and general stationery lines coming under the converted paper category. Envelope manufacturers, also, report light demand outside of the standard sizes. There is a fair call for waxing, glassine and grease proof lines and manufacturers say that far from being worried by increased use and output of cellophane the extensive sale of that product is helping the sale of glassine and grease proof by opening up new uses for these papers.

There has been little change in the market for wrapping and paper bags. Kraft is still in light demand both domestically and for export and the coarse paper market generally is going through a somewhat trying period. Price cutting is still prevalent in the coarse paper market and the whole wrapping and paper bag industry appears to be in need of organization. Of course the generally poor business being done of late in the retail trade of the Dominion has accounted to some extent for light sales of wrapping but the general business tide seems to have turned now and the coarse paper market should very quickly react to better business conditions.

As far as the paper box and the box board industries go both are operating lightly. The paper box plants should be working on Christmas stuff now and some of them are. But the volume is small and it begins to look as if it would not advance to anything like the point of former years. There is only small volume orders being placed with the board mills, most of which are operating at about fifty per cent capacity. The board industry is still suffering from over-expansion and more or less ruinous competition, although in the case of the Dominion Boxboards in Toronto the plant has been running pretty close to capacity of late. Acquisition of the Fibre Company's plant by Dominion some weeks ago has added considerable tonnage to the purchasing company.

N. B. Mill to Re-open Soon

Word from New Brunswick is to the effect that the former Nashwaak Pulp and Paper Company's mill at Union Point, Fairville, will be in operation early in October after having been idle since 1930. The plant was recently taken over by the Port Royal Pulp and Paper Company. Coincident with this announcement, it was stated by Antoine Lacroix, manager of the concern, that stream driving operations on the St. John River, which have almost become a memory, would be resumed by the company with the shipment of 10,000 cords of pulpwood from Grand Falls, N. B., this week for the production of pulp. A similar quantity of pulpwood will be shipped by water from Restigouche, Que., as required. Simultaneously from Van Buren, Maine, will come the first shipment of 120 tons of waste chips from the Madawaska Lumber Corporation's mills there. The Port Royal Company expects to reach the ultimate capacity of 125 tons per day, the previous high capacity being 86 tons. There are 76 men now employed at the plant.

Westminster Paper Co. Has Good Outlook

Lower net profits but an improved working capital is reported by the Westminster Paper Company, New Westminster, B. C., for the fiscal year ended July 31, 1932. Net amounted to $19,870 as against $21,336 in 1931, and surplus account was at a slightly higher level. At the recent annual meeting a 4 per cent cash dividend was declared on the 47,789 outstanding shares of common stock, involving a distribution of $19,116. This dividend absorbs all but $3,788 of the $22,904 surplus shown on the balance sheet as at July 31, 1932. Gross sales for the year amounted to $485,408. After deduction of $17,993 in discounts and allowances and $331,150 in costs, gross profit for the year was shown at $136,265. Interest on investments, amounting to $6,216, brought gross income to $142,481. In a statement to shareholders J. J. Herb,

president, comments on the improved position and states that in view of the material decline in the price of the company's finished products it was only by practicing strict economy in operations that the company was able to operate at a profit. Credit was also due, he said, to the sales staff in keeping the plant operating at capacity when the demand for paper products generally showed a marked decrease. Prospects for the present year, he said, were favorable.

Not to Invade Box Market Yet

In an interview with the PAPER TRADE JOURNAL H. Godfrey, vice-president and general manager of E. S. & A. Robinson (Canada) Ltd., the new organization formed from the parent company in England, and which has commenced operations in a plant on Dupont street, Toronto, stated that the matter of the manufacture of paper boxes had not yet been taken up but that the company would not start this branch of the business for at least six months. The lines to be manufactured in the Toronto plant in the meanwhile include calendars, labels, box coverings, posters, general advertising matter, show cards, waxed papers, bread wraps, special paper bags, cellophane bags, waxed and notion bags. One machine was put into operation the latter part of September and other machines are now being installed. Mr. Godfrey is vice-president and general manager of the Canadian plant with R. H. Griffin as sales manager and S. C. Dobson treasurer. Foster Robinson is chairman of the board. The company is reported to be several months behind in their orders for waxed paper lines.

Firstbrook Boxes Bondholders Meet

Holders of the 6 per cent first mortgage sinking fund bond of Firstbrook Boxes Ltd., appointed a protective committee of five members at a meeting held in Toronto on September 14. The committee is largely representative of institutional investors who hold a large percentage of the bonds outstanding and the committee has been authorized to give effect to any provision of the trustee securing the bonds. It is stated that several offers have been made for the company and the meeting was adjourned until a later date when the committee will report. At the meeting $334,000 of bonds was represented, out of an outstanding amount of some $474,000. Firstbrook Boxes failed to meet bond interest due June 1 last and institutional investors took these actions with a view to correcting the situation, although no meeting of bondholders was called until the interest had become three months in arrears. The company operates a large plant at Mount Dennis, near Toronto, and manufacture corrugated paper boxes, folding cartons, display boxes and wooden boxes.

Notes and Jottings of the Trade

Stocks of pulpwood aggregating 200,000 cords which have been piled along the main line of the T. & N. O. Railway since early in the year, are now being moved to the mills as a result of the 2 cent reduction in freight put into effect by the railway. The wood will be shipped at the rate of 50 cars a day to the United States mills. It is expected that the entire lot of pulpwood will be moved out without interruption. The sales will enable settlers and jobbers to secure funds with which to resume operations during the coming winter.

Contract has been awarded for the construction of an addition to the Pacific Mills, Ltd., plant at Vancouver. The estimated cost of the structure and equipment is $100,000. The new plant will be used for the manufacture of solid fiber containers. Machinery will be installed and work started immediately.

Richelieu Pulp and Lumber Company, Ltd., have been granted a charter to carry on the forest product business in all its forms and to manufacture pulpwood, poles, etc. The headquarters of the company will be in Montreal and the incorporators are William G. Gilbert, Benjamine Benoit, of Montreal, and Harold B. Fisk, of Outremont.

The E. B. Eddy Company, Ltd., Hull, will this season cut about 55,000 cords of pulpwood in the Gatineau district. This will represent an increase of 10 per cent over the previous year and will give employment to about 400 woodsmen.

The B. C. Pulp and Paper Company, of Vancouver, B. C., with mills at Port Alice and Woodfiber, won the Workmen's Compensation Board safety contest for the year June 1, 1931, to May 31, 1932. The company had a record at its Port Alice mill of one day lost in every 2,077 hours worked.

Price Bros.' Position

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 26, 1932.—It is probable that Price Bros. & Co. will not be able unaided to meet the interest payment which was due on August 1 on its first mortgage bonds. This is the statement made in an official letter to the company's preferred and common shareholders. The letter, issued by W. P. Creach, secretary of the company, is as follows:

"On the 1st August last your company was unable to pay the half-yearly installment of interest due on that day on its first mortgage bonds. Under the terms of the trust deed of hypothec, mortgage and pledge securing these bonds, if the failure to pay such interest shall have continued for a period of ninety days then proceedings under such default may be instituted and your company's assets liable to forfeiture under the terms of the deed.

"As you are probably aware, the conditions under which the news print industry is operating are extremely difficult and it is improbable that your company will be able, unaided, to meet this liability.

"Your board of directors are making every effort to obtain assistance prior to the default becoming actual, under terms which are not too onerous to the company.

"Your board of directors feel that the shareholders should be informed of the acuteness of the company's position and give them this advance notice that it may be necessary, if their investment in the company is to be protected, for them to provide, at least in part the required assistance."

During the week formation of a Protective Committee in the interests of the preferred shareholders of the company was announced. It is composed of: R. H. Collis, Kiteat & Aitken, London, Eng; Col. George P. Murphy, C.M.G., Ottawa; Col. I. P. Rexford, general manager, Crown Trust Company, Montreal; H. J. Symington, K.C., Royal Securities Corporation, Ltd., Montreal, and A. C. M. Thomson, K.C., of Quebec.

"In view of the present situation," says an official statement, "it is considered advisable for the holders of the preferred stock to unite for the protection of their interests."

The office of the committee will be located at 244 St. James street, Montreal.

A committee already exists for the bondholders.

Swedish News Print Production

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 28, 1932.—News print production in Sweden during the month of July totaled 17,804 metric tons against 14,824 tons in the preceding month and 19,685 tons during the month of July.

Demand for Paper Slightly Better In Chicago

In Numerous Instances More Than Seasonal Request for Various Standard Grades of Paper Is Being Experienced—Fine Paper Market Gradually Becoming More Buoyant — Kraft Wrapping Paper and Sulphite Bond Divisions Somewhat Steadier

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., September 24, 1932.—For the first time in many weeks virtually all of the markets in Chicago reported some improvement during the seven days just past. A stronger tone has appeared and, in many cases, more than seasonal demand for paper is being shown. Prices are still unmoved for the most part by the improvement but the seemingly general betterment in demand is considered heartening. The kraft market, according to reports, has gradually firmed up until it has reached a price comparable with its position prior to the last drastic break a few weeks ago. Sulphite bond has received a lot of attention from jobbers here and they, reports indicate, have done a most commendable job in giving a firmer tone to this market. Fine papers are improving in demand, with requirements for fall and winter business indicating that other lines of business are feeling a material pick-up. Blottings are said to be improved. Kraft specialties are also reported better. Books and covers are feeling a strengthening demand. The news print market is feeling a very recent price change, quotations in the Chicago press this morning showing a drop of $7.00 affecting Chicago buyers. The board market is reported as showing slightly more than seasonal improvements. The waste market has, so far, only slightly responded to the betterment, per hundred pound prices in heavy book stock being quoted here at $.25 to .30; No. 1 soft white shavings, $1.00 to $1.10; white news blanks $.80 to .85; folded news .20 to .25, and mixed papers, miscellaneous, .10 to .15.

National Association's Fall Meeting

Omitted from the list of paper activities in 1931 the fall meeting of the National Paper Trade Association is going to be held in Chicago next month with the largest membership in its history behind it and a long list of real problems before it. Members of the industry, including all branches and ramifications, will meet at the Hotel Stevens on October 3, 4 and 5, with enough open meetings, luncheon events, etc., scheduled to make the big Chicago hotel paper trade headquarters in far more than name only for the three day period. Chicago representatives of the fine paper division report unusual interest in their branch of activity while coarse paper manufacturers and representatives, the gummed tape group and others hold a similar optimistic brief for the coming sessions. According to Harold Knott, vice-president of the Middle West Division of the Salesmen's Association of the Paper Industry, the Salesmen's Association will have a luncheon event on the program and still anticipates the holding of a golf outing at Olympia Fields Country Club on October 6.

In years past the National Paper Trade Association has made it a policy to transact a good deal of important business in various committee meetings with only as small and select an attendance as possible. During the coming sessions the doors will be open to everybody and the committee meetings will be changed to open house meetings so that everyone interested in any particular type of discussion may attend. Conflicts at all sessions will be avoided just as much as possible.

Paper Board Meeting Well Attended

An unusually good attendance and a discussion of several problems of outstanding importance to the industry characterized the Chicago meeting of the Paperboard Industries Association which was held at the Congress Hotel, Chicago, September 20, 21 and 22. The meeting held more than ordinary importance both because of existing conditions and because the Presidential and Group nominating committees were named at the Chicago session. Highlights of the program included a frank discussion of the employment situation under the direction of President Henry D. Schmidt, a feature of the joint session on Thursday morning, September 22. Naturally, the association also went on record as favoring comprehensive and progressive national programs designed to contribute to the general upturn in business.

A report, submitted on the surveys of the paper board and container industry at the present time, was well received, while a complete analysis of the recent important changes in corrugated and fiber box specifications and on recent classification changes authorizing the use of paper board boxes in new fields, gave the executives present a fairly reliable picture of the near future possibilities of the industry.

Frank C. Ash, J. M. Arndt, J. L. Barchard and M. M. Madson presided at the Paperboard, Container Group Sales Executives, and Folding Box Container Group meetings respectively. The association will elect officers and adopt its program for the fiscal year at an annual session to be held in New York City, New York, in November.

News of the Trade

If the "way to a man's heart is through his stomach," Bermingham & Prosser, in advertising Peacock Folding Enamel, have chanced upon a happy way to gain the attention of the average paper buyer. The latest mailing piece from this company carries a full color illustration of an attractively arranged dinner table with the food—sliced ham and trimmings—all ready to eat. Not only does the illustration illustrate the reproductive power of Peacock Enamel but it adds more to the attention-getting qualities of the mailing piece than any illustration that has come over this desk in some time. "At the price of Peacock, Peacock has no equal!" is an added line to the copy indicative of Bermingham & Prosser efforts to prove that quality means as much, if not more, than price.

Chicago has been decorated, during the past few days, with a new mammoth billboard advertisement which proves that some paper houses are going after mass consumption of their product. The Hammermill Paper Company has a gigantic billboard placed in many strategic points in Chicago, the illustration showing two secretaries discussing their work and one of them saying "I like this new Hammermill Bond, it erases so neatly." And the company does not neglect to mention Hammermill is available for "letterheads and business forms."

The West Virginia Pulp and Paper Company must have persuaded all of its major officials to write a bit to the buying trade. A few weeks ago Mr. Luke, the president, wrote some well chosen words on quality and price. Now comes J. R. Miller, vice-president, to supplement Mr.

Luke's message with more about the evils of price cutting. The Chicago trade learns that price cutting has "led to the cheapening of products; the lowering of standards; the loss of good will; the spread of unemployment; the destruction of purchasing power; the sacrifice of many of those things to which men and companies have devoted their lives and brought disappointment and distress to the buyer and user without contributing in any way to the welfare or prosperity of either." Mr. Miller adds the paragraph that "in the case of basic materials (such as paper) demoralization of prices leads to demoralization of the price structures of the industries or businesses which use them. Stabilization of such prices at a fair level is far better for the converter or user than frequent and abrupt fluctuations, which lead to uncertainty and confusion in the buyer's own business."

Sufficient comment has been made on a recently printed article in the PAPER TRADE JOURNAL concerning lower freight rates from points in Wisconsin and other northern states to Chicago and surrounding territory to indicate a widespread desire on the part of the paper industry to learn more of the facts concerning this Commission order. Executives can write the Interstate Commerce Commission, asking for I.N.S. Case Number 3724 to get specific details on this ruling.

Considerable interest is being evidenced in Chicago over the news that the American Paper Bottle Company, recently incorporated by a group of industrialists, has built a machine likely to revolutionize the milk bottle industry. Chicago reports say that the machine on which the new bottle is formed, fills and seals the package of milk in one operation, the machine taking the milk directly from the pasteurizer, forms the container, immerses it in superheated paraffin, cools, fills and seals the bottle. The milk will be sealed and bottled with paper and the new process, naturally, opens up a tremendous new field for the paper industry if the plan works out as anticipated. The home office of the new factory is to be, according to reports, located in Toledo, Ohio.

Boston Paper Market Conditions

BOSTON, Mass., September 26, 1932—Better conditions continue in the wholesale paper market, with a slight improvement in both fine and wrapping paper during the week. There have been many inquiries, with a good number of orders resulting in some cases and in others a small increase in the volume of business. In some instances, at least, there has been more demand for fine writing paper in September than there was in August. Covers have been moving fairly well. A moderate amount of business has been placed for paper for advertising purposes. Bonds and ledgers sold in average amounts. The situation in wrapping paper is more favorable, with No. 2 kraft prices steadier. While this grade is reported to have been sold at less than .02½, it is stated to be firm at this figure at the present time.

The position in box board is brighter, with values recovering to higher levels. Filled news board is now quoted at a flat price of 30.00, 40s to 80s, compared with a range of 25.00 @ 30.00, which has been current for some time. Chip board for creasing, 40s to 80s, has risen to 27.50 @ 30.00, compared with a previous range of 25.00 @ 27.50. Single manila lined chip has advanced from 35.00 @ 37.50.

Prices for paper stock are unchanged. Foreign gunny bagging continues scarce. It is not expected that much will be available until strike conditions in England are settled. One concern, it is said, has been selling domestic gunny at .75, but it is now selling at .80. The current quotation is .80 @ .90.

Permanent Roll Paper Exhibit

Visitors to the Cameron Machine Company, 61 Poplar street, Brooklyn, N. Y., have passed much favorable comment on the extensive exhibit of roll paper products on display there. The exhibit assembled under the direction of H. E. Overacker, advertising manager of the company, comprises a full range of roll sizes from a 60 inch diameter roll of board to rolls of passe-partout tape 1½ inch in diameter.

The range of sizes in itself gives an insight into the demand for paper in roll form, but of still greater interest is the various kinds of papers wound into rolls and the uses to which this paper in roll form is afterwards put. Some

CAMERON EXHIBIT OF ROLL PAPER PRODUCTS

products appear in this exhibit which have never gotten beyond the experimental stage. Other products known to the public for years are shown applied in new ways. Truly an excellent place for the alert manufacturer to pick up new ideas.

Not only are roll products on display, but also samples of pasting, combining, strip combining and laminating, as the Cameron Machine Company are now making machines for these purposes.

A visitor is always welcome and more often than not, he leaves with a mental note or two which will help him to profit in fresher and greener pastures.

Bamboo Pulp for London Newspapers

Bamboo will be used as a raw material for the making of news print from a mill to be established at Nairobi, Kenya Colony, Africa, to supply London newspapers, according to a report from Vice Consul Oscar Thompson, Nairobi, made public by the Commerce Department.

A concession of 50 square miles of forest in Kenya Colony was recently granted to Charles Udall, of Nairobi, the report stated, who is reported to have succeeded in interesting one of the leading newspaper groups in the enterprise to the extent that agreements have been signed, machinery ordered, and a mill is to be built near Kijabe, about 45 miles northeast of Nairobi.

Capital invested is reported to be about £500,000, and the mill is expected to be completed within the next 12 months. It will have a capacity of about 40,000 tons a year.

Warren Stock Pumps in Paper Mills

The Warren Steam Pump Company, Inc., Warren, Mass., has just issued a new Bulletin No. 202-2, the contents of which treats specifically of the use of Warren Stock pumps in pulp and paper mills. The value of this bulletin is enhanced by various charts illustrating the friction loss in feet per 100 foot of cast iron pipe covering sizes of pipe from 4 inches to 12 inches. This bulletin may be had by writing the Warren Company, Warren, Mass.

International Paper Cuts News Print Prices

Announces Reduction of $7 Per Ton to Contract Customers for Balance of 1932 and for Year 1933—New Schedule Also Provides $1 Per Ton Allowance at Certain Specific Ports Where Company Delivers by Steamer In Cargo Lots.

The International Paper Company from its offices at 220 East 42nd street, New York, has announced to its news print contract customers a reduction in price for the balance of 1932 and for the year 1933. The new price is $46 a ton at cities in the territory where the price has been $53, which includes New York and Chicago. The prices at other representative points are $46 a ton at Baltimore, Jacksonville, New Orleans, Houston; $45.50 at Washington and Pittsburgh; $44.50 at Albany; and $49 at Atlanta, Chattanooga, Birmingham, and San Antonio. The new price schedule provides a $1 a ton allowance at certain specified ports, including New York and Chicago, at which the company delivers by boat in cargo lots.

* * *

Result of Intense Competition

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 26, 1932—With the price of news print all shot to pieces, and with cut-throat competition at last an admitted fact, the position of the great news print industry is now more critical than at any period since the collapse of the boom.

As was expected, the action of Price Bros. & Co. last week in announcing a reduction on contract prices from $53 to $47.50 per ton has been quickly followed by competitive announcements, the International Paper Company taking the lead with a cut to $46 per ton at cities in the territory where the price has been $53 per ton, an important added feature being that an allowance of $1 per ton is made at certain specified points, including New York and Chicago, at which the company delivers by boat in carload lots.

The International Paper Company has been impelled to this move, it is thought, in order to retain some very important contracts, including that of the Hearst interests, which call for 140,000 tons of news print annually.

Over-Expansion Main Factor

It is now admitted that for some time past various manufacturers have been selling below the official level, and that the competition of Scandinavian interests, which have been selling news print in the spot market at around $38 per ton, New York delivery, has had some bearing on the situation. The main factor, however, is the great over-expansion of productive capacity and the failure so far to work out any effective plan of amalgamation of large competing interests.

How serious the situation has become may be judged by estimating the loss that will be caused by the new price cuts. In 1931 the exports of Canadian news print to the United States amounted to 2,063,561 tons. On the basis of an export of say 2,000,000 tons, a drop of $7 per ton would mean a loss of some $14,000,000, as compared with 1931 prices. This, in the face of the fact that most news print organizations are in serious financial straits, and were unable to make a profit even at $53 per ton, indicates how stormy the future now appears. While New York funds were at a premium of some 15 per cent in Canada, Canadian producers were recouped in some measure for the low price of $53 per ton, but now the premium has dropped to around 10 per cent and indications are that it will drop still lower. That is an added unsettling factor.

Exports Fall Off

Returns by the Dominion Bureau of Statistics show that there was a decrease of over $25,000,000 in the total value of paper exports from Canada for the twelve months to the end of August last, as compared with the preceding similar period. News print accounted for the bulk of this falling off, with a decrease of approximately $19,000,000. At the same time, however, shipments during the month of August were moderately higher in practically all cases than those in July, but showed declines as compared with August, 1931. A situation similar to this has been revealed in regard to shipments of wood pulp and pulpwood.

News print exports during August had a value of $7,251,752, which compares with $6,289,600 in July and $8,416,977 in August of last year. The total of all paper exports was $7,545,883, comparing with $6,515,107 in July and $8,683,177 in August of 1931.

Bleached and unbleached sulphite pulp exports were higher, sending the total for all pulp shipments to $1,486,689, as against $1,339,558 in July and $2,502,372 in August a year ago.

The total of all pulp and paper exports for the first eight months of the current year stands at $73,520,041, which compares with $95,547,366 in the same period of last year.

Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 28, 1932.—The Government Printing Office has announced the following paper awards.

The Aetna Paper Company for furnishing 5,000 pounds of salmon sulphite writing paper in 24 inch rolls at 5.37 cents per hundredweight on wood pulp from Dexter, at 7.87 cents per pound, bids for which were received on September 7.

Walker, Goulard Plehn Company, Inc., for furnishing 1,100 sheets of 20 x 25 green gummed paper at $11.40 per M sheets, bids for which were received on September 12.

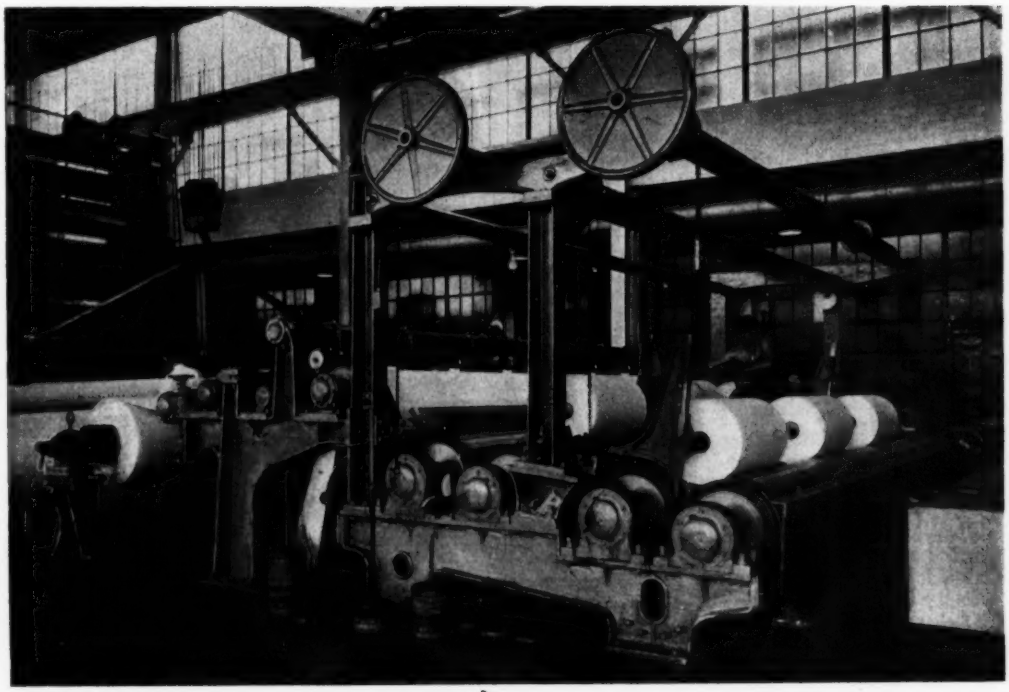
Albany Paper Co. Starts

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., September 19, 1932.—The Albany Paper Corporation, just organized at Albany, Ind., begins operation this week of the plant of the Bahr Refiners Corporation, which the former company has leased for five years with the privilege of purchase. The factory has not been in general operation for a period covering several years. The Albany company, which at first will have a force of about fifty employees, will manufacture paper, box board and paper box board products. The incorporators are A. E. and Lena T. Bentham, Albany, and Walter R. Butler and Dorothy A. Butler, both of Chicago.

The MOORE & WHITE Co.
PHILADELPHIA, PA.
N. PHILA. STA. PENNA. R.R.
PAPER MILL MACHINERY

HIGH SPEED FOUR-DRUM WINDER & SLITTER



MOORE & WHITE HIGH SPEED all ball bearing equipped four-drum winder & slitter with quick removable ***bottom*** slitter blades in mill of Champion Fibre Co., Canton, N. C.—236″ width of drums operating at a paper speed of 2100 feet per minute.

DESCRIPTIVE CATALOGUE
UPON REQUEST

New York Trade Jottings

Col. C. H. L. Jones, president of the Mersey Paper Company, Liverpool, Nova Scotia, was a prominent New York visitor last week.

* * *

Ange di Trani and Cristoforo Mega have organized the Ethyl Mill Supply Company, with offices and warehouse at 497 West Broadway, New York, and will deal in waste paper and other paper mill supplies.

* * *

Summerfield Eney, Jr., of the New York office of the Champion Paper Company, addressed the Printing House Craftsmen of Pittsburgh, Pa., last Tuesday. He plans to address the Philadelphia Craftsmen on October 13.

* * *

The regular weekly luncheon and meeting of the Eastern Division of the Salesmen's Association of the Paper Industry was held at the Hotel Roosevelt on Monday last, when matters of interest to the members were freely discussed.

* * *

At a recent meeting of the Cover Paper Manufacturers Association, Willis H. Howes resigned as president. He will remain a member of the Executive Committee. Russell S. Madden, vice-president of the American Writing Paper Company was elected president of the association.

Arthur Wright & Associates Formed

Arthur Wright and George W. O'Keeffe have formed an organization to be known as Arthur Wright & Associates, equipment and process engineers. Their main office is at 155 East 44th street, New York City, with a branch office at 1580 Macadam Road, Portland, Ore. Other offices are to be established throughout the United States and Canada.

They will act as general sales representatives of FEinc equipment for Filtration Engineers, Inc., Newark, N. J., and will aim to render an expert engineering service on all problems involving filtration in any of the process industries.

Mr. Wright has been specializing on filtration problems for more than 20 years and is the author of a well known treatise on the subject. Mr. O'Keeffe brings to the organization an experience of 15 years as an expert in drying and filtration problems. The aim of the new organization will be to adapt exactly the right machine to each particular industrial problem presented for solution.

Experience has shown that the proper functioning of process equipment is dependent upon the control of the material in process so as to enable the machine to maintain its economy and efficiency. In such work Messrs. Wright and O'Keeffe have played a big part in the successes established to date, and the new organization proposes to continue this particular branch of engineering with even greater intensity.

Abitibi Declared Bankrupt

TORONTO, Ont., September 26, 1932.—The Abitibi Power and Paper Company, Ltd., with plants and offices throughout Ontario, was declared bankrupt today by Justice Sedgewick at Osgoode Hall.

The application was made by the Canada Packers Company of Toronto. At the request of the petitioners and other trade creditors, F. C. Clarkson was appointed liquidator.

Paper Man's Widow Gets Big Rebate

DAYTON, Ohio, September 19, 1932.—"Believe it or not," a total of $719,443.32 tax has just been paid on the estate of the widow of a Miami Valley paper manufacturer.

This developed during the past week when the final determination of the amount due as inheritance tax on the estate of Mrs. S. Jennie Sorg, Middletown, who was the widow of the late Paul J. Sorg, was made in the Probate court of Butler county, Ohio, and approved by Judge Gideon Palmer.

Just now when cities, counties and even states are struggling to get out of the "red," this development is of special interest.

Already $254,181.84 has been paid to the state of Ohio as inheritance tax, and the announcement Wednesday is that a balance of $318,250.09 is due, for a total of $572,431.93, one-half of which goes into the state treasury and one-half to the City of Middletown, where Mr. Sorg lived virtually all his life and amassed the greater part of his fortune. He established the Sorg Paper Company after having been in the tobacco business for many years.

In addition, $3,122.65 was paid to the state of New York on tangible property taxable in that commonwealth, and $719,443.32 to the United States Government on estate taxes.

Gross value of the estate was placed at $7,201,044.98. Gross deductions and exemptions allowed in computing the Federal estate tax was $788,145.13. Maximum credit allowable against the United States estate tax was $575,554.58.

A final statement of assets and liabilities showed real property worth $81,266.32; cash, $3,677.18; personal chattels, notes, mortgages, $134,088.75; stocks and bonds, $6,342,320.09; insurance payable to the decedent, $73,377.50; insurance payable to Jane Drouillard $401,588.92; Texas real estate $6,500; tangible personal property located and taxed in New York, $198,226.25.

Among the deductions listed were funeral expenses, costs of administration and attorney's fees amounting in all to $342,937.25, less an amount as U. S. estate taxes, $345,962.60, and miscellaneous, $140.000.

The report was submitted by Anthony H. Walburg and the American Trust and Savings Bank of Middletown, as administrators.

Among the most valuable holdings of the estate were stock in paper concerns and other Middletown and Miami Valley industries.

Boston Paper Trade Happenings

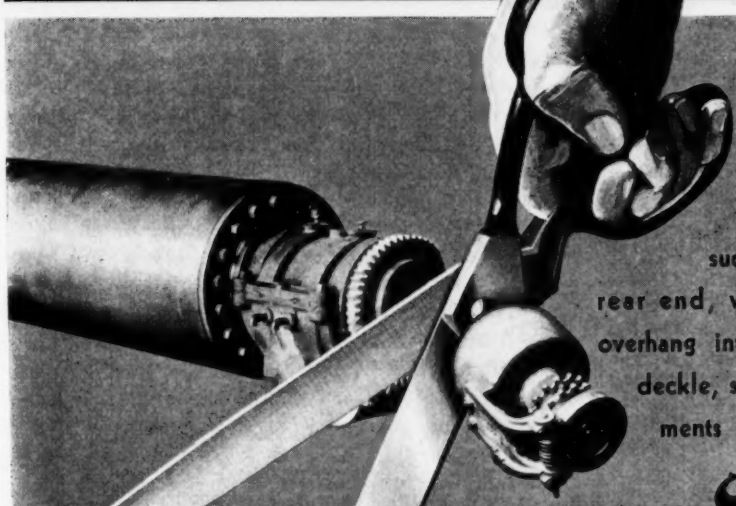
[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 26, 1932—The A. M. Collins Manufacturing Company has brought out three new covers, with the Arnold-Roberts Company as exclusive New England agents. The covers are Hand-weave, Leather-Glo and Bookcraft. Some very handsome sample books are being issued.

James Lowell Ham, of Arthur L. Ham & Sons, is receiving best wishes of all on his marriage to Louise Johnson, daughter of Mrs. Thomas J. Wetzel. The ceremony took place September 17, at St. Andrews-by-the-Sea, Hyannisport, with Rev. Dr. Norman Hutton officiating. Mr. and Mrs. Ham were the recipients of a large number of beautiful gifts. The reception was at the summer residence of the late Thomas J. Wetzel at West Hyannisport. Mr. and Mrs. Ham left for a honeymoon trip through Vermont and Canada. On their return they will live at 413 Washington street, Brookline.

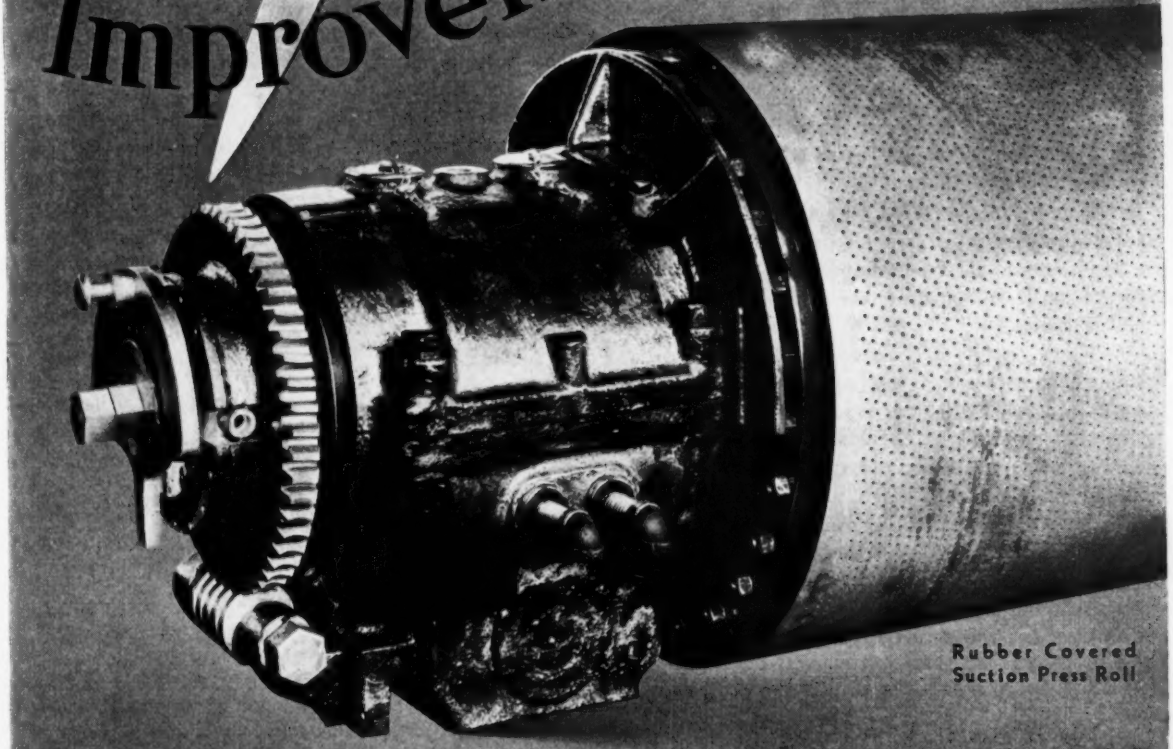
H. W. Jewett Sons Company, paper and roll paper, has incorporated. There are 500 shares of $100 each.

DOWNINGTOWN



Improvements

Two important changes have been made in the Downingtown Suction Roll, both of which make the front end much more compact. First, the suction connection was moved to the rear end, which saved several inches of overhang into the machine aisle. Then, the deckle, suction box and packing strip adjustments were redesigned and condensed. The front end of the roll is now practically flush with the sill plates of the machine, safe from damage by passing trucks. The Downingtown Manufacturing Company, Downingtown, Pa.



Rubber Covered Suction Press Roll

WE CAN "RUBBER COVER" YOUR OLD SUCTION ROLLS

PAPER TRADE JOURNAL
ESTABLISHED 1872

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COMING EVENTS

PAPER AND PULP SECTIONS OF THE NATIONAL SAFETY COUNCIL, Twenty-first Annual Safety Congress and Exposition, Wardman Park and Shoreham Hotel, Washington, D. C., October 3, 4, 5, 6 and 7, 1932.

NATIONAL PAPER TRADE ASSOCIATION, Semi-Annual Convention, Stevens Hotel, Chicago, Ill., October 3, 4 and 5.

OPTIMISM FORTIFIED BY EVENTS

Recent signs of business expansion and financial recovery, together with the strong rallying in security and commodity markets following the downward reaction in the middle of the month, the Guarantee Trust Company believes have further improved business sentiment. While it is admitted that the trade revival, as far as can now be discerned, is very moderate, the absence of a more emphatic upturn is not regarded as an indication that the price advance is unsound. The consensus of opinion seems to be that both security and commodity values had sunk to levels that were wholly unwarranted by actual conditions, even when the business outlook was at its worst, and that the upward movement was a sound and logical reaction, quite apart from any improvement either in the industrial or the financial situation.

On the whole, therefore, the events of the last few weeks have confirmed, rather than discredited, the optimism that has arisen as a result of the unexpectedly favorable developments of the summer. There is, of course, very little tendency to anticipate swift and spectacular progress toward high business levels. It is almost universally conceded that recovery must be a gradual and irregular process. But the significant fact is that it is the outlook for recovery, rather than the fear of utter disaster, that now occupies attention.

The upturn in business activity is indicated by numerous reports, some of which are considerably more convincing than others. There has unquestionably been a great improvement in all the leading branches of the textile and apparel industries. The increase in foreign trade last month, while not large, is encouraging, particularly the substantial rise in the value of imports. Recent increases in car loadings seem to be larger than might have been expected as a result of purely seasonal influences. Bituminous coal production has increased materially from the low levels of midsummer. A slight expansion has taken place in construction contracts, and lumber production has gained. The increase in factory employment last month suggests a revival of rather broad scope, though of small magnitude, in the rate of industrial production. In these and certain other directions, current data seem to support the view that the improvement consists of something more substantial than a rise in prices and a more cheerful sentiment.

At other points, there is little or nothing to offer in confirmation of the general belief that a real upturn has occurred. Steel-mill activity has shown no more than a seasonal gain. The monthly report of the Federal Reserve Board on sales of department stores shows an increase from July to August of somewhat less than the estimated seasonal amount. Automobile production declined in August and appears to have remained virtually stationary this month. Bank debits fail to indicate any significant increase in the volume of check payments. Electric power output, after rising for several weeks, has declined sharply.

The financial situation has improved further, with comparatively few bank failures, a continued inflow of gold, and a decline in the amount of money in circulation, indicating, presumably, greater public confidence in the banks and a decrease in hoarding. There has even been an increase in the amount of bank credit outstanding, although this has taken the form of a rise in investments, rather than in loans, and thus is less significant than it might be as an indication of increased business activity. While the liquidation of loans is still under way, it is worthy of note that the rate of contraction has diminished perceptibly in the last few weeks. Moreover, the increase in investments appears to reflect a marked lessening of the pressure that had previously forced banks to throw their security holdings on the market in an effort to enhance their liquidity. Bank failures last month numbered only 85, as against 131 in July and 151 in June. Twenty banks reopened with aggregate deposits almost equal to those of the banks that closed.

The Federal Reserve banks have continued to maintain their holdings of Government securities at a virtually unchanged level. With rediscounts still decreasing, the total amount of Reserve credit in use has tended to decline, rather than advance, in recent weeks. The increase in gold holdings and the decline in note circulation have combined to strengthen the reserve position of the banks.

PAPER MACHINERY IN SWEDEN

Paper-making by machinery in Sweden is this year a hundred years old, and the honor of having been the first to set up a paper machine falls, to Klippan's paper mill in southern Sweden which is still active.

In fact, the Klippan mill is much older than that, dating

from 1523, when it was founded by Sten Bille, an uncle of Tycho Brahe, the great astronomer, in what was then the Danish part of southern Sweden. It is the oldest paper mill in the country. Bishop Hans Brask is supposed to have started a paper mill in his Swedish diocese near Linköping in the 1520s and a few years later the king, Gustaf Vasa, built one of his own near Stockholm. None of these are now in operation. On the other hand the largest Swedish mills are now located in the central and northern parts of the country where the largest pulp supply is found.

The first Swedish paper-making machine was made in England by the firm of Bryan Donkin & Co., which had obtained the patent rights from France. The first six months it produced 44 tons of paper and the following year 131 tons. Of the original machine now nothing remains but the drawings, supplied by the manufacturers who are still in business, and they have been reproduced in a memorial booklet by the Klippan company.

Finnish Pulp Market Marks Time

WASHINGTON, D. C., September 21, 1932.—The Finnish pulp and paper market continues to mark time. The demand for news print and wrapping papers according to American Consul Bouchal, at Helsingfors, has been slow during recent weeks, and kraft mills are reported to have made further price concessions in order to stimulate business.

Inquiries for chemical pulp are expected to fall off with the resumption of production in Sweden. Exports of all classes of pulp and of paper during the first seven months of the current year have been substantially above similar shipments that were made during the corresponding period of last year.

S K F Move Hartford Factory

S K F Industries, Inc., of New York, supervising The Skayef Ball Bearing Company of Hartford, Conn., The Hess-Bright Manufacturing Company, Atlas Ball Company, and S K F Research Laboratory, of Philadelphia, have announced the consolidation of the manufacturing activities of The Skayef Ball Bearing Company of Hartford with The Hess-Bright Manufacturing Company, at Philadelphia.

This action on the part of S K F Industries, Inc. will give effect to the advantages of concentration of manufacturing and research activities.

The complete line of products previously manufactured at Hartford will be continued at Philadelphia.

Frank Timmerman Elected Chairman

Frank Timmerman of the Northern Paper Mills, Green Bay, Wis., was elected chairman of the Northwest Division of the American Pulp and Paper Mill Superintendents' Association at the annual fall convention of the Division held in Duluth, Minn., recently. Grover Keeth of the Marathon Paper Mills Company, Rothschild, Wis., was elected first vice-chairman; Harry Williamson of the Nekoosa-Edwards Paper Company, Port Edwards, Wis., second vice-chairman and H. W. Sherman of the Northern Paper Mills, Green Bay, Wis., was elected secretary-treasurer.

Howard Interests Enter Envelope Field

DAYTON, Ohio, September 26, 1932.—Establishment of an entirely new manufacturing plant in Dayton within the next three months, to be known as the Howard Envelope Company, representing an investment of more than $1,000,000 when ready for operation, was announced here last week.

The plant is being established here through removal of the equipment of the large Centralia Envelope Company, Centralia, Ill., which has been purchased by the Aetna Paper Company of Dayton, the Howard Paper Company of Urbana and the Maxwell Paper Company of Franklin.

Colonel Maxwell Howard, president of the Howard, Aetna and Maxwell mills, will head the new company and Howell H. Howard will be general manager. Directors of the company will be Ward R. Howard, Urbana; Lucius H. Howard, Urbana; Herbert H. Hoffman, Cincinnati; C. E. Hoffman, Pasadena, Cal., and Howell H. Howard.

Location of the plant here has not yet been determined, but will be decided within the next two or three weeks. The new company has an option for lease with privilege to purchase the group of buildings formerly occupied by the Chrysler Motor Car Company on Leo street.

These buildings in total provide 230,000 square feet of floor space and extend over 24 acres of land and, according to the officials of the paper company, would be ideal for the new plant.

The company, however, is considering an alternate plan, that of erecting a new plant adjoining the Aetna Paper Company on Columbia street in Edgemont. Should such a plant be built it would have approximately the same floor space as the former Chrysler buildings.

Removal of machinery from the Illinois plant will begin in about two or three weeks and Colonel Howard states by that time a decision will have been made as to which site will be chosen and the machinery consigned accordingly.

No Tax on Industrial Electricity

Electricity used in paper and envelope manufacturing is not subject to tax, under an important ruling just announced by the Tax Department, according to J. S. Seidman, tax expert of Seidman & Seidman, certified public accountants.

"The law imposes a 3 per cent tax on electrical energy used for domestic or commercial consumption," Mr. Seidman explained. "Electricity used for industrial consumption is not subject to tax. The question arose whether electricity furnished to paper plants is commercial in its scope or industrial. The decision of the Tax Department is that it is industrial and hence exempt from tax.

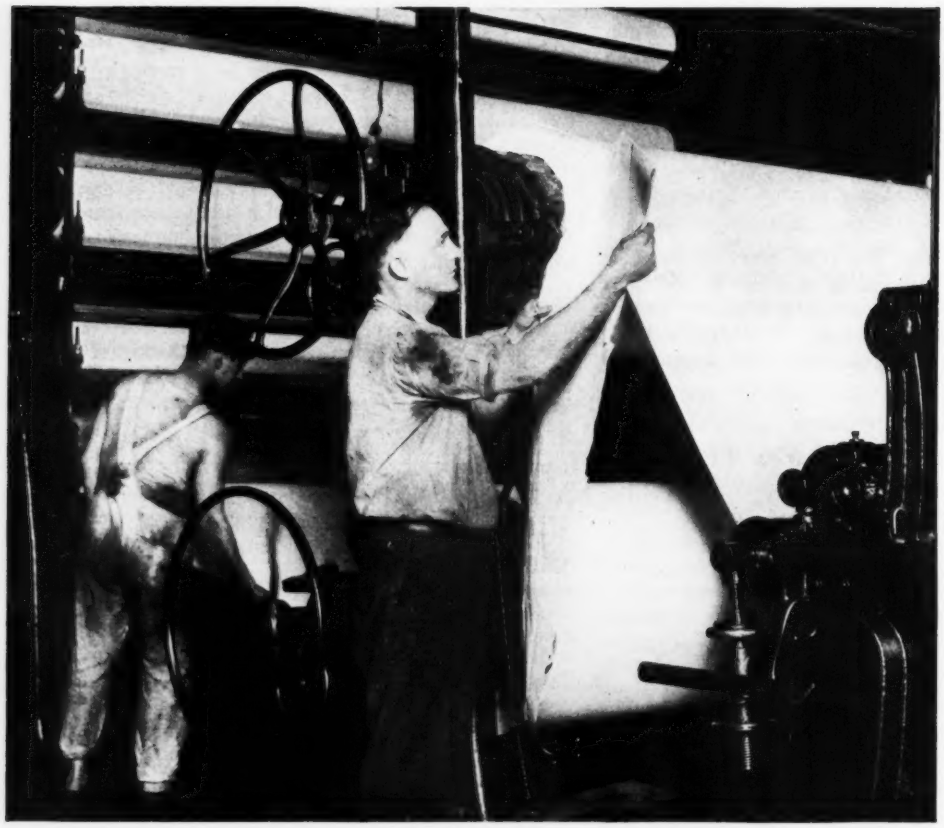
"However, the ruling adds," Mr. Seidman declared, "that electricity used in the branch offices or sales agencies is a commercial use and hence is subject to tax."

New Swedish Wage Agreement

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 28, 1932.—The new agreement entered into between the Swedish wood pulp mills and their workers provides for a 7 per cent cut in both the hourly wages and piece work rates, whereas the contract offered the workers on March 17, and rejected by them, provided only for a reduction of 7 per cent in piece work rates. The agreement, which was reached on August 5 is to be effective throughout the remainder of the year and is to continue to remain in force after that date, unless denounced before November 1, 1932.

Coating



Chemicals

CASEIN — CHINA CLAY — SATIN WHITE

If making fine coated papers is your business, no one needs to tell you your coating equipment and chemicals must be GOOD. But maybe you don't know that coating chemicals by American Cyanamid & Chemical Corporation have more than a hundred years' "service record". This name is comparatively new; but in its coating chemicals division a long-established company is represented . . . a company formerly independent, known the world over for the quality of its products and its familiarity with paper makers' needs.

AMERICAN CYANAMID & CHEMICAL CORPORATION

535 Fifth Avenue, New York

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Water Jacketted Steel Smelter Body for Recovery

By Frederick W. Hooper[1]

Since the construction of the first sulphate pulp mill chemical recovery smelter up to and including present day smelter construction one of the most, if not the most, important consideration has been the kind of refractory material to be used. There are several good refractory products on the market today and various mills are using the different refractories according to the results obtained by actual operating experience, some mills are using soapstone, some use chrome brick and others are using various kinds of special refractory now being manufactured.

Methods of chemical recovery in the sulphate pulp process have been improved greatly in the last decade and new refractory materials have been developed and used but nevertheless the question of refractory costs and smelter maintenance is still of great importance. In addition to the high cost of maintenance on the usual type of chemical recovery smelter the amount of heat lost through radiation from the refractory walls is quite appreciable.

With the idea of reducing the cost of smelter maintenance and utilizing the heat being dissipated through the refractory walls, the writer began investigating the possibility of extending the use of the basic principle of water jacketting to chemical recovery smelters. At this time several mills had adopted the use of water jacketted arches of various types and some mills had installed a water-jacketted connection or neck from the smelter to the rotary incinerator. These improvements had turned out to be quite satisfactory. The writer understands that one or two mills had even built a complete water jacketted smelter but that trouble was experienced in maintaining a steady flow of water at a uniform high temperature and also that the general operation of the smelter was adversely affected to such an extent that the water jacketted smelter had to be lined with the usual refractory material before normal operation could be secured.

The mill where the writer carried out his experiments had four smelters of the single fire-pot type with a rotary incinerator and disc evaporator behind each unit. Three of the units were equipped with water jacketted steel arches which only extended down to a point on the side of the smelter about a foot below the top of the rotary lip. The fourth unit was built completely of soapstone. The first step taken to check the operation of each of the smelters was to install a recording thermometer at the exit end of the disc evaporator to obtain a record of the temperature of the waste flue gases from each unit. A recording thermometer was then placed on each unit equipped with a water jacketted arch to record the temperature of the water being discharged and metered tests were made to determine the amount of hot water each unit produced. Air pressure recorders were also installed on each unit to compare the air pressure carried on the blow pipes.

The operation of each unit was carefully checked and observations carried on over several periods of two to three weeks' continuous operation. No reduction in temperature of exit gases from the disc evaporators was observed on any of the units equipped with water jacketted arches, in comparison with the temperature of the flue gases from the unit built completely of refractory material and the operation of all units continued in a normal manner.

Problems Encountered

Results thus obtained prompted the writer to consider entering his water jacketted construction until 85 per cent of the smelter body above the base or hearth would be so constructed. Some of the questions raised were:

1. Would the steel construction stand up under conditions existing where the walls were in contact with the fuel bed?
2. Would the operation of the smelter as regards production and reduction be adversely affected?
3. Could this type of construction be made so that under all operating conditions it would be considered quite safe?
4. How could the temperature of the discharged water be maintained at any desired temperature?
5. Could proper circulation of the water be assured throughout the whole smelter body without affecting the operation of the smelter or interfering with the temperature of discharged water?

The foregoing questions were duly considered and a water jacketted steel smelter body was designed which combined the features essential for safety of operation, assurance of desired temperature of discharged water together with positive circulation of the water within the jacketted body at all points, and efficient operation of the smelter.

Some of the many advantages of this specially constructed smelter body were not realized until one had been in operation for a while and the writer is in the fortunate position of being able to refer to an installation which is

* Presented by title at the fall meeting of the Technical Association of the Pulp and Paper Industry, Holyoke, Mass., September 14-16, 1932.
Contribution of TAPPI, Alkaline Pulping Committee.

[1] Member TAPPI, engineer, Ross Engineering Company of Canada, Ltd., Montreal, P. Q.

operating very successfully and has given the utmost satisfaction since first installed with no maintenance charges whatsoever. This installation is at Ocean Falls, British Columbia, which is operated by the Pacific Mills Limited, a subsidiary of the Crown Zellerbach Corp. All experiments leading up to the final improved design of the smelter body were carried out at this plant, the first water-jacketted construction was built and put in operation over 18 months ago and yet no appreciable sign of wear could be detected at the end of the 18 months and no maintenance was required on this part of the smelter body during that period.

Advantages of Water-Jacketted Steel Smelter Body

The important advantages of an installation of this water-jacketted steel smelter body over the usual type of refractory smelter are:

1. Longer life.—Five years life is considered a very conservative estimate, when it is noted that the life of the average smelter blow pipe is anywhere from 4 to 6 years and that it is subjected to more severe operating conditions than the actual smelter body. It is reasonable to expect the same length of life from the smelter body as is obtained from the blow pipes, if not longer.
2. Pre-fabrication.—This smelter body is built in sections for either round or rectangular smelters and could be shipped ready to assemble in the plant. To make an installation on a single recovery smelter should not take more than four days. It is readily understood that the savings due to decreased inoperative time is quite appreciable.
3. Low maintenance.—To date no maintenance has been necessary on any of the units installed. Needless to say the saving resulting from uninterrupted operation is worthy of consideration.
4. Production of hot water.—Enough hot water at a temperature of 195 deg. F. is being produced from two 25 ton units at Ocean Falls, B. C., to wash 80 tons of pulp daily on an Oliver washer. Actual metered tests conducted on a 25 ton unit showed 45 U. S. gallons of water per minute being raised from 50 to 195 deg. F. which is equivalent in heat value to 3,000 pounds steam per ton of pulp. In some mills hot water for pulp and lime sludge washing may be already available at little or no cost but many mills can make attractive savings by using water at a temperature of 195 deg. F. for their washing requirements when it is produced steadily in sufficient volume by utilization of waste heat. If sufficient hot water is already being obtained for the above named purposes it can be used as boiler feedwater if required.
5. Removal and replacement of blow pipes accomplished very quickly and easily through specially constructed ducts in the water jacketted body.
6. Controll of secondary air, required for combustion of gases above the fuel bed is also provided for.
7. Frequent starting and shutting down of the smelter has no detrimental effect on the smelter body and no trouble is caused by the "spalling of refractories" as is experienced in the usual type of smelter. This also eliminates the trouble often encountered in keeping spout holes cleared of pieces of broken refractories.
8. The usual stock of refractory material kept on hand can be reduced by about 90 per cent. This will represent a substantial saving in many mills because it is usually necessary for reasons of economy to purchase refractories in large quantities and have ample stock on hand in case of emergency.

By actual experience it is being demonstrated that the general operation of recovery units equipped with this new design smelter body is much improved and more uniform than was obtained when operating the old type units. Conditions in the recovery room have also been improved to a great extent by providing a cooler and cleaner place for men to work in.

It is also possible to force this type of smelter without having to meet high maintenance costs afterwards. This necesity exists in many mills at the present time.

A model of this smelter body was examined by an inspector of the Hartford Insurance Co. at Ocean Falls, B. C., who not only recommended its installation but also was particularly pleased with the special system of water circulation which has been incorporated in the design. A British Columbia Government boiler inspector who was present with the insurance inspector, agreed that the design was particularly good and pointed out the fact that it was so constructed as to prevent a building up of pressure and is therefore exempt from the strict government regulations governing the use of pressure vessels.

In closing, the writer wishes to express his appreciation of the assistance given by the executives, engineering staff and fellow workmen of the Pacific Mills Ltd. in developing his smelter body at Ocean Falls, B. C. As a result of this cooperation all the data necessary to substantiate any statements made in this article has been gathered from actual operation.

Special features of design and construction are covered by patent applications in United States and Canada.

Interrelation of Writing Inks and Paper

Experimental study of the interrelation of various types of writing inks and papers in respect to effect on stability of both the writings and the papers bearing them has been started at the Bureau of Standards. This investigation is being made jointly by the Organic Chemistry Section and the Paper Section. The former section, which deals particularly with writing inks, will prepare the inks and the inked papers, and test the inks for fading. The Paper Section will apply the usual stability tests to the inked and uninked papers.

For these tests, nine papers have been selected that are representative of the different fibers and sizing materials used in commercial writing papers. Four inks containing variously hydrochloric acid, sulphuric acid, and gum arabic, are being used for the first experiments, and other types may be studied later. For testing the rate of darkening of the inks, their permanence to light and their insolubility in water and alcohol, streaks will be made by flowing the inks on the papers. For determining the effect of the inks on the papers, lines will be drawn uniformly on the papers with a drawing pen, in such a way as to simulate the average ratio of written characters to paper bearing them. Duplicate sets of the test specimens will be preserved for observation of their behavior under natural aging.

Treatment of Boiler Feed Water

"No Scale, No Sludge, No Mud—The application of Zeolite water softeners to the treatment of boiler Feed Water." This is the title of a very complete, interesting 36 page booklet just published by The Permutit Company, 440 Fourth avenue, New York. It is profusely illustrated with photographs and diagrams and contains tabulated data, conversion tables, factors, reactions, etc. Copies may be obtained free upon request to the Permutit Company.

Fiber Length Effect on Pulp and Sheet Properties*

By Roger B. Brown[1]

Abstract

A new method of producing short fibers has made it possible to separate the effect of fiber length on pulp characteristics from the results produced by other factors. Much that has formerly passed for truth is now found to have no foundation in fact. It has been found that from a papermaking standpoint fiber length has no effect on slowness, shrinkage, porosity, springback, and color. Numerical data are presented which show the relation between the short fibrous material originally present in unrefined chemical wood pulp and short fiber made from the long fiber remaining after the original short fibrous material has been removed.

The Slowness Illusion

The pulp and paper industry contains many industrial proverbs which have been handed on like heirlooms from generation to generation. Typical of such statements is the following: "Short fibers are slower than longer ones."

In the manufacture of groundwood pulp the longer fiber bundles are screened from the shorter and it is well known that the latter are slower draining. When rags are converted into paper by being refined in beaters the fibers are markedly reduced in length and simultaneously the stock becomes much slower. The same statement has been applied to the naturally shorter fibered chemical wood pulps since the ubiquitous beaters and jordans with metal bars and knives are used to refine them and the refined stock is slower. Very short fibers found in first quality sulphite pulp which has had no mechanical refining are much slower draining than the longer fibers[2]. Thus the papermakers of former days have had considerable reason to believe the ald adage was true since all that happened when fibers were refined was not appreciated.

Recent Work on the Problem

In a paper[2] given at the February, 1932, TAPPI convention the effect of fiber length on sheet properties was discussed. The author of the paper obtained fibers of different lengths by separating the shorter fibers from the longer ones in unbeaten sulphite pulp; and believing that the two fractions were the same except for the obvious difference in physical dimensions, a comparison of the two pulps and sheets prepared from them was made. The fiber fraction passing through a 60 mesh wire screen was reported to be "very slow, and dark in color, resembling a highly overbeaten pulp." Since this work was financed by the Technical Association and the American Paper and Pulp Association and was carried out in a laboratory operated by the United States Government the old adage has ample moral support.

For more than ten years the writer has known that the shorter fibers of unrefined sulphite pulp differ both physically and chemically from the longer fibers. This fact is apparently not general knowledge since when he suggested last February that the comparison of the fiber fractions obtained from sulphite pulp as above described was a difference of something more than fiber length he found no one to concur in this view.[3] At that time he suggested that the long fibers remaining after the original short ones had been removed be used as the source of both long and short fibers. But the thought persisted that short fibers, however obtained from unrefined sulphite pulp would be "very slow, and dark in color, resembling a highly overbeaten pulp."

The writer has, therefore, followed his own suggestion and has gathered together some experimental data for which no claim to high numerical accuracy is made. It is presented with the idea of painting a picture, the proportions of which are substantially correct.

Experimental Procedure

Since this is a continuation of work which has not been published and is not here repeated, it should be said in passing that the short fibrous material separated from first quality unrefined bleached sulphite pulp contains approximately ten times as much resinous material and a similar proportion of ash as the original pulp; and because of these differences the short fibrous portion is much darker in color than the longer fibers. The former is also much slower draining and in concentrated form has a sticky feeling.

In the current work the original short fibers present in four different types of pulp have been separated from the longer fibers by washing the original pulps with water on a 60 mesh wire screen and collecting the short fibers from the water by decantation followed by drainage through muslin. Short fibers were also obtained from portions of the remaining long fibers only by forming the fiber into sheets, air drying, and cutting the sheets up fine with an ordinary guillotine paper cutter. The chopped fiber was repulped and separated into long and short fibers by washing with water on a 60 mesh wire screen. In this way 100 per cent of a given long fibered pulp can be converted into short fibers which necessarily differ from the former in physical dimensions only.

Of the four unrefined pulps investigated, namely, bleached sulphite, "Super Alpha", bleached soda, and unbleached southern kraft, manufactured short fibers were made from the first two only. There is no point lost by not making short fibers from the other two pulps since the relation between the long and manufactured short fibers of those pulps would be substantially the same as of the ones investigated. The same may be said of the characteristics which have been determined on some of the fibers and not on others.

Experimental Methods

Slowness was determined on a special piece of apparatus in which a 1/10 per cent pulp suspension was placed. The time required for the volume to drop from an initial height of five feet above a 100 mesh wire screen to a line two feet above the same point is recorded as the slowness. Water alone has a slowness of three seconds in this equipment.

Flobility[4] is the name given by the writer to the volume in milliliters occupied by one gram of fiber after it has settled for fifteen minutes from a liter of suspension of 1/10 per cent consistency.

Shrinkage was obtained by measuring the area of a sheet after it had been wet pressed under 125 pounds per square inch, dried without restraint, humidified, and its area again measured.

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* Presented at the fall meeting of the Technical Association of the Pulp and Paper Industry, Holyoke, Mass., September 14-16, 1932.

[1] Member TAPPI, chemical engineer, 2548 Nottingham Way, Trenton, N. J.

[2] R. H. Doughty, Technical Association Papers, Series XV, No. 1. 137-142 (June, 1932).

[3] R. H. Doughty and C. E. Curran, Technical Association Papers, Series XV, No. 1. p. 22 (June, 1932).

[4] R. B. Brown, Technical Association Papers, Series XV, No. 1. 133-136 (June, 1932).

The time in seconds for 100 cc. of air to pass through a sheet when placed in a Gurley densometer was used as a measure of porosity.

Springback[4] was obtained by measuring the thickness of a mat of pulp while under a pressure of 125 pounds per square inch and again obtaining its thickness after the pressure was removed. One hundred times the difference between the two readings divided by the smaller of the two gives the numerical measure of this characteristic.

Sheets for bursting and tearing determinations were wet pressed under 125 pounds per square inch between felts. Those to be used for bursting strength were dried without restraint and humidified before being tested. The tearing strength was obtained on sheets dried between fabric on a steam heated cylinder and then humidified. Both of these characteristics are expressed as percentages: the Mullen value in pounds or the tear value in grams being divided by the basis weight (480 sheets each 24 inches x 36 inches) and the fraction multiplied by 100.

To be perfectly comparable all sheets of the various pulps tested for burst, tear, and porosity should be of the same basis weight. For several reasons peculiar to these unusual pulps the basis weight was not made the same. Many of the pulps were so lacking in strength that the weight had to be increased to obtain enough resistance in the sheets to give a significant instrument reading. Other sheets had to be of high basis weight to secure sufficient uniformity of formation. The available quantity of some of the pulps limited the weight of the sheets. Burst and tear values of 15 per cent or less are somewhat less accurate than those indicating a higher strength. Porosity results of less than two seconds per 100 cc. are given only as approximations. In spite of these limitations the data is of relative value in obtaining a complete picture of the problem. All values of slowness, flobility, and shrinkage are considerably more accurate, being probably within ten per cent correct.

The amount of original short fibrous material obtained from "Super Alpha" was 5.1 per cent of the whole pulp. Approximately the same proportion of kraft and sulphite was secured as original fines. In the case of soda pulp several times as much of the whole pulp passed through the 60 mesh screen.

COMMENT ON DATA

Slowness vs. Fiber Length

An inspection of the table shows how much slower is the short fibrous material originally present in unbeaten pulps than the longer fibers only. This is true in the case of all pulps examined but the difference between the two varies from twenty times to seven hundred times the slowness of the longs only. Obviously, other factors than fiber length are responsible for this difference.

The rate of drainage of manufactured short fibers made from long unbeaten fibers only is actually slower than the latter, but unless the difference were determined numerically in a precision instrument it would never be suspected in routine work with the pulps. In usual commercial practice all of the pulps examined, with the exception of soda, would be refined to approximately four hundred seconds in slowness. Consequently, a difference of forty seconds would almost never be noticed in plant operations. Since no one would ever commercially refine pulp until it all passed through a 60 mesh wire screen, these manufactured short fibers represent by far the slowest stocks which would ever be produced in mill operation by merely decreasing the fiber length.

The slowness of the original shorts from bleached soda was markedly less than in the case of any of the other fibers. The probable explanation of this is to be found in the fact that soda, being noticeably a shorter fibered pulp than the others, when screened through the same woven wire gives a larger percentage of fines which are a combination of very slow matter with many fibers which are akin to manufactured short fibers.

Although the original short fibers drain slowly, they are comparatively free when considered in connection with a well refined pulp (last column) which makes in sheet form an excellent glassine paper.

Flobility vs. Fiber Length

The manufactured shorts of the two pulps examined have practically the same flobility even though the long fibers of the same two pulps differ widely in this respect. This is perhaps due to the fact that the manufactured shorts were practically of the same average fiber length in the two cases (other factors affecting flobility being negligible or equal) while the long fibers had a greater average fiber length in the case of "Super Alpha". This is borne out by the fact that the latter pulp had a much wilder sheet formation than the long fibers of sulphite pulp, but as soon as the "Super Alpha" longs were reduced somewhat in fiber length the sheet was much more uniform in formation.

The flobility of the original shorts shows a rather wide variation, from 45 for soda to 350 for "Super Alpha". The low value for soda indicates, as before noted, that the original shorts contain besides some slow matter of perhaps medium high flobility relatively many fibers akin to manufactured short fibers which are of lower than average flobility for this screen fraction. The high value for "Super Alpha" indicates considerable of that property which is familiarly called "hydration". In this connection it might be well to refer to the 900 flobility of well refined glassine pulp. Thus does another characteristic guide us in determining the effect of fiber length on the behavior of pulp.

Shrinkage, Springback, and Porosity

Both shrinkage and springback of a pulp have a marked effect on the porosity of a sheet made therefrom and dried without restraint. The fiber density of a sheet while being wet pressed also plays considerable part. In

	Bleached Sulphite			"Super Alpha"				Bleached Soda			Unbleached Kraft			Sulphite Pulp Refined for Glassine Paper
Characteristics	Longs only	Original Shorts	M'f'd. Shorts	Longs only	Original Shorts	M'f'd. Shorts	Whole Pulp	Longs only	Original Shorts	Whole Pulp	Longs only	Original Shorts	Whole Pulp	
Slowness in seconds	20	6000	62	28	20,000	66	36	29	670	40	17	6500	24	200,000
Flobility in ml	260	130	50	450	350	55	400	...	45	125	...	80	265	900
Shrinkage in area, per cent	4.0	10.9	3.2	5.5	22.9	4.0	5.5	3.2	11.3	3.6	4.8	23.0	5.2	33
{Bursting Strength, per cent	15	32	10	10	40	10	...	10	19	8	24	38	37	100
{Basis Weight, Lbs. per ream	(110)	(94)	(90)	(91)	(52)	(60)	...	(103)	(67)	(200)	(87)	(53)	(72)	(20)
{Tearing Strength, per cent	80	38	10	60	65	7	...	...	17	15	...	70	150	...
{Basis Weight, Lbs. per ream	(83)	(74)	(51)	(60)	(45)	(43)	...	...	(47)	(200)	...	(52)	(70)	...
Porosity in sec. per 100 ml	2.5	250	2.7	1	660	0.5	1	1	17	1	1	160	1	10,000
Sprongback, per cent	...	...	...	50	...	50	...	...	...	51	...	...	62	...

The number in parenthesis below a burst or tear value represents the ba sis weight of the sheets tested.
Porosity was obtained on sheets used for bursting strength.

unrefined whole commercial pulps this quantity is not far from 0.6 grams per cubic centimeter when the pressure is 125 pounds per square inch, but may be 50 per cent higher or lower in refined pulp depending on the nature and extent of the refining.

Low shrinkage or high springback in a pulp forecasts a highly porous sheet. In the case of "Super Alpha" the shrinkage is low and the springback high both on the long and manufactured short fibers and the resulting sheets are very porous. Conversely, the shrinkage of the original shorts is high and the ensuing sheet is but slightly permeable in comparison. A numerical determination of the springback of the original shorts of any pulp was not obtained because of insufficient quantity of fibers; but to one experienced in handling fibers of high and low springback it was very evident that the springback of the original shorts was much lower than of whole pulps, long, or manufactured short fibers.

Strength vs. Fiber Length

Manufactured short fibers are almost devoid of tearing and bursting strength, and therefore tensile strength. The strength values shown in the table would be still lower if fibers had been manufactured which were no greater in length than in diameter and made into sheets. Long fibers only have little bursting strength but in comparison considerable tearing strength. The bursting strength of the original fines is in every instance markedly higher than of the long fibers only. The former sometimes have a lower and sometimes a higher tearing strength than the latter in spite of the great difference in fiber length. It is interesting to see in the case of kraft the contribution which the small amount of original fines make to the bursting strength of the whole unbeaten pulp.

Color

There was no difference in color between the longs and shorts manufactured therefrom, but the original shorts in each instance were noticeably different in this respect from the whole pulps and manufactured shorts. The difference was greatest by far in bleached sulphite and least in soda and kraft. The original fines of the last were less red and duller while the original fines of the sulphite were much more yellow and gray than the longs. The original shorts from "Super Alpha" were much less gray than those from bleached sulphite.

Sheet Formation

The manufactured short fibers of both pulps made almost as uniformly closed sheets as did the original fines and differed widely in this respect from the longer fibers. Whole soda pulp has a comparatively short average fiber length yet it makes a wilder sheet than the longer fibered whole bleached sulphite pulp.

Conclusions

The preceding data indicate that concerning *unrefined chemical wood pulp* we may draw the following conclusions:

(1) From a scientific viewpoint slowness increases as fiber length decreases.
(2) From the standpoint of practical papermaking fiber length has a negligible effect on drainage rate.
(3) Fiber length has practically no effect on porosity.
(4) Fiber length has practically no effect on the shrinkage of a sheet while drying.
(5) Springback and color are unaffected by fiber length.
(6) Uniformity of sheet formation is largely dependent on fiber length.
(7) Tearing strength is greatly influenced by fiber length.
(8) Reducing the fiber length decreases the bursting strength.
(9) The short fibrous material originally present in pulp is entirely different in characteristics than equally short fiber made from long fiber from which the original short fibrous material has been removed.
(10) From the standpoint of practical papermaking drainage rate, color, porosity, springback, and shrinkage are affected to a much greater degree by other things than fiber length.

Cuprammonium Viscosity Test in Pulp Evaluation*

By M. D. Reuben[1]

Summary

The cuprammonium viscosity test has been used in the estimation of rag stock quality for the past several years. Within the last year this test has been used for chemical pulp, and has proven of more or less value depending on the use and interpretation which has been given to it by the individual laboratories. This paper will present the variables of the viscosity test itself, its applications to chemical pulp testing which have proven safe and helpful tools, and the limitations of the test in applying to purchase specifications.

Variables in the Viscosity Test

The tentative standard method for the cuprammonium viscosity test[2] has proved satisfactory except in cases of very hard unbleached pulps. In this case, the use of a 0.5 per cent pulp solution instead of a 1.0 per cent solution has been helpful. By plotting the data in Table I. on semi-logarithm paper, a straight line proportion is obtained, and values at 0.5 per cent concentration may be corrected to the standard 1.0 per cent concentration.

Difficulty will be encountered in preparing a 15.0 grams per liter copper solution, unless the surface of the copper is thoroughly cleaned with dilute hydrochloric acid. Satisfactory results have also been obtained using a prepared basic copper nitrate salt. In this case, preparation of the copper-ammonia solution is greatly facilitated.

TABLE I
VISCOSITY IN CENTIPOISES

0.5 Per cent Concentration	1.0 Per cent Concentration
8.0	21.5
9.0	28.5
10.0	36
11.0	49
12.0	65
13.0	86
14.0	113
15.0	150

* Presented at the fall meeting of the Technical Association of the Pulp and Paper Industry, Holyoke, Mass., September 14-16, 1932.
Contribution of the TAPPI Pulp Testing Committee.

[1] Junior member TAPPI, chemist, York Haven Paper Company, York Haven, Pa.

[2] Determination of Cuprammonium Viscosity, Tentative Official Standard Method of Technical Association, Tech. Assoc. Papers, Series 15, 217-18 (June, 1932).

In the case of low viscosity pulps, a variation in room temperature of two degrees above or below 20 deg. C. is within the limits of experimental error. With high viscosity pulps, the thermostat is essential. The time of solution of the pulp in the cuprammonium solution is not important as long as complete dispersion has been obtained. This may be two to four hours in the case of bleached pulps, and a much longer time for unbleached pulps. For the sake of standardization, fifteen hours should be allowed. No decrease in viscosity will be found after this period of time, provided the solution is not exposed to light or air. In dealing with unbleached pulps, a small proportion of partly undissolved fibers may be found under the microscope even after the fifteen hour period. This in itself is a measure of the fiber condition, and since reproducible results can be obtained after the fifteen hour dispersion period, the incomplete solution of the unbleached fibers may be disregarded.

It is often more convenient to cut the pulp samples, especially if in handsheets, into 1/8 inch squares, than to shred the pulp. In this form the pulp is easier to insert in the tube and will not gel as quickly when the solution is added.

Applications to Pulp Testing

Bleaching of Pulp

The viscosity test has proved of great value in determining the optimum bleaching conditions of both alkaline and sulphite pulps. The effect of the variations in the bleaching process on the strength of the finished product, is indicated by the viscosity test. The variations in the bleaching procedure, such as density of stock, number of stages, chlorination, and alkalinity during bleaching, should be so adjusted that the highest viscosity will be obtained for a given degree of whiteness.

During bleaching, the lowering of viscosity is almost proportional to the bleach consumed. During the first period of a bleach, the chlorination of the lignin bodies, the greatest drop in viscosity takes place. The first hour of an eight hour bleach will witness 75 to 90 per cent of the total viscosity drop. In overbleaching, the viscosity is further reduced. Removal of the degenerated cellulose products of overbleaching, by means of dilute alkali, will give a slight increase in viscosity. This is due to the removal of the low viscosity products, which dissolve, leaving those of higher viscosity.

Table II indicates the strength-viscosity relations of a pulp bleached under different conditions.

TABLE II

Viscosity of Bleached Pulp	Maximum Per cent Mullen
14.0	102
11.5	94
9.0	86
7.0 (Overbleached)	62

A high viscosity unbleached pulp will give a comparatively high viscosity bleached pulp with good strength retention. Counterbalancing this is the higher bleach consumption required by the harder, or higher viscosity pulp.

Cooking of Pulp

Any chemical treatment of pulp is accompanied by a lowering of its viscosity value. Cooking conditions such as temperature, concentration of cooking liquor during and especially toward the end of a cook, and duration of a cook, are all reflected in the viscosity of the pulp. In the cooking of a pulp, as the lignin is gradually removed, more and more of the cellulose will dissolve in cuprammonium solution, until a point in the cook is reached when the pulp has a maximum viscosity. At this stage of the cook, the pulp contains the least amount of degraded cellulose. In cooking beyond this point to remove more lignin, the viscosity of the pulp is decreased, and the strength is injured. An overcooked pulp has a low viscosity which is reflected in a lower strength. The overcooking of kraft pulp is accompanied by a slight lowering in viscosity and in strength. The overcooking of sulphite pulp, because of the hydrolyzing effect of the acid liquor, carries very serious consequences. In this case, the pulp has a very low viscosity, with low strength and loss in yield.

Limitations of the Test

The viscosity test has been useful in studying the bleaching and cooking of pulp. However, it can be applied only in comparing pulps from the same source, which have undergone similar treatments as is the case in any one pulp mill. It must be used very cautiously with pulps from different sources, as would be the case in purchasing pulp on the open market. It must be kept in mind that the viscosity test is merely a measure of cellulose degradation. Hard mitscherlich pulps in general, will have high viscosities. We have found strong West Coast pulps with low viscosity, and conversely mediocre western pulps with extremely high viscosities. The viscosity of kraft pulp cannot significantly be compared to that of mitscherlich; viscosity of spruce cannot fairly be compared with hemlock or jack pine; nor does viscosity of West Coast pulp have any relation to that of European pulp. We have found with our purchased pulps, that pulps of high or low chlorine number may have the same viscosity, and that pulps of different viscosity may have very nearly the same characteristics on the paper machine.

For these reasons, we feel that the cuprammonium viscosity test is limited in the field of chemical pulp testing to local mill use, where the source of materials and the conditions of treatment are definitely known. This test is a sensitive tool which when used intelligently will make the laboratory more valuable to the bleach plant and to the pulp mill.

Legibility of Barograph Traces

Tests were recently completed at the Bureau of Standards to determine the legibility of barograph traces made upon charts sprayed with a lampblack solution when differently shaped scribers were used. Tests were also made to determine the best kind of paper to use for the chart. It was found that a trace made by a sharp or pin-pointed scriber was superior to those made by the other two types of scribers in common use, namely, the fairly blunt point obtained by shaping the end of the barograph arm and the triangular cup type which is used necessarily when the traces are made in ink upon white paper. The pin-pointed scriber is commonly made by soldering a straight pin to the end of the arm of the barograph, bending it in a suitable manner and sharpening it upon a stone. Three types of paper were tested—a thin typewriting paper, bond letterhead paper, and a heavy paper commonly called "statement paper." The statement paper was the most satisfactory, as it was the easiest to handle and gave the best trace.

Paper Price Index Number

Washington, D. C., September 28, 1932.—The August wholesale price index number for paper and pulp was 76.3 compared with 76.2 for July and 80.6 for August of last year taking 1926 at 100 according to the Bureau of Labor Statistics, Department of Labor.

The Volumetric Composition of Paper*

V. Composition of the Air Fraction; the Effect of Solid Fraction and Thickness on the Porosity and Air Transmissibility of Simple Papers

By C. O. Seborg[1], R. H. Doughty[1], and P. K. Baird[1]

SYNOPSIS

The capacity to transmit air and the porosity of test sheets of several solid-fraction values at each of several ream weights, and consequently at several thicknesses, have been determined with the use of a testing apparatus, of the Emanueli type, that was described in the preceding paper of this series.

The equivalent pore radius and the air-transmission values decrease very rapidly with increasing solid fraction. At any solid fraction less than about 0.40 the pore radius is nearly independent of the variations in sheet thickness that are caused by change in ream weight, while air transmissibility is roughly inversely proportional to thickness. At higher solid fractions, pore radius varies somewhat with thickness, while air transmissibility is virtually independent of it.

Introduction

The following definitions are now in use at the Forest Products Laboratory in the Section of Pulp and Paper. *Porosity* is an intensive or unit structural sheet property related to the pore component of the air fraction. The *equivalent pore* is an assumed right cylindrical orifice, of length equal to the sheet thickness, that would transmit as much air as all the pores in a unit area of sheet actually do. The term expresses a structural property of the sheet. *Air transmissibility* is the capacity of the sheet to transmit air or other gases, and *air transmission* in general is the rate of flow of air through unit sheet area under unit pressure drop, expressed as cm.^{3} per. sec. per cm.^{2} per cm. water head. Air transmissibility is a sheet property involving thickness as well as structure.

The pore radii as determined here are not real quantities; they are only arbitrary values, calculated from the air-transmission data, which vary not only with the thickness and solid fraction but also, in some instances, with the air pressure applied in the test.

Porosity is a property of paper that is of considerable importance, since it affects the transmission of air, ink, and oil and is thus a factor in the capacity of a sheet to meet the use requirements of many papers, such for example as bag, printing, insulating, waterproof, and greaseproof. In practice it is controlled to the desired limits by the selection of stock and by heating, loading, and paper machine and finishing operations. The present article shows how the porosity and the air transmissibility of pulp test sheets are affected by variations in their thickness and solid-fraction values when such variations are brought about by suitable adjustment of the pressure on the wet sheets and proper change in basis weight.

It may be helpful to point out at once that *ream weight*, in any size and count, is the weight of a definite number of sheets of a prescribed size and is thus the weight of an area. Consequently it can be changed by changing that area, without affecting any intensive property of the sheet in the slightest degree. Such changes in extensive properties, however, are clearly of no significance in studying intensive sheet properties. *Substance number* ($17 \times 22 - 500$) and *basis weight* ($24 \times 36 - 500$) are free from this difficulty, but still refer to definite areas only. It is therefore preferable to designate a sheet by both its solid fraction (F) and its thickness (C) values, which are connected specifically to basis weight (W) by the equation

$$\frac{W}{C} \times 0.0427 = F \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

in which the numerical constant depends on the fact that W is in pounds per ream, $24 \times 36 - 500$ basis, and C is in mils, while an average value of 1.5 is used to represent the density of fiber substance.

Experimentally, it is much simpler to make a group of sheets of definite weight than to make them of definite thickness, and consequently constant-thickness curves are obtained by interpolation from constant-weight curves. Thickness is proportional to basis weight at any given solid fraction, but the proportionality factor changes with solid fraction. In this work it is especially desirable to make comparisons on a thickness basis, since thickness appears as the length of the equivalent pore in the equation for viscous flow:

$$V = \frac{r^4 P}{8 \eta l} \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

in which V is the volume flowing through a capillary per unit of time, P the pressure applied, r the radius, and l the length of the capillary, and η the viscosity of the fluid.

Experimental Material

The test sheets used in this work were simple papers, by definition, since they contained only fiber substance and air; size, loading, and similar noncellulosic substances were entirely absent. The small amount of water adsorbed at the standard conditions of 65 per cent relative humidity and 72 deg. F. temperature, under which the tests were made, may for present purposes be neglected.

Six series of sheets of different basis weights, made up from one unbeaten spruce sulphite pulp, were studied; the range in basis weight was from 20 to 150 pounds. Each series was composed of from 12 to 18 sheets, each of which was formed in the wet condition at a different pressure, which ranged from 2 to 2000 pounds per square inch. As a result of the differences in pressure, each basis-weight series presented a considerable range of solid-fraction values and corresponding thicknesses. Data on the strength of the sheets as a function of solid fraction and basis weight have been reported elsewhere.[2]

Experimental Procedure and Results

The construction and operation of the test apparatus, which was of the Emanueli type, have been discussed in detail in the preceding paper of this series.[3] The test is sufficiently well known to make repetition of the description unnecessary.

The porosity values of the samples tested were deter-

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York City, N. Y., Feb. 15-18, 1932.

[1] Members TAPPI, junior chemist, assistant engineer, and senior chemist, Forest Products Laboratory, Madison, Wis. Maintained at Madison, Wis., in cooperation with the University of Wisconsin.

[2] Doughty, R. H. Paper Trade J. 93, No. 15, 44-49, 54 (Oct. 9, 1931).

[3] Doughty, R. H., Seborg, C. O., and Baird, P. K. Paper Trade J. 94, No. 24, 31-3 (June 16, 1932).

mined and reported as equivalent pore radius and as air transmissibility.

Fig. 1 illustrates the rate at which the equivalent pore radius decreased when the solid fraction of the dry sheets, at various thicknesses, was increased. In analyzing the experimental results for equivalent pore radius the data were plotted on logarithmic paper against solid fraction, or air fraction, at several thicknesses of sheet, and the curves were extrapolated to give limiting values of pore radius for zero and unit solid fractions. Such values, revised when more experimental data are available, may prove useful in estimating certain internal structural properties of the sheet.

The relation of equivalent pore radius to thickness, when solid fraction is constant, is illustrated in Fig. 2. If the equivalent pore radius depends solely on solid fraction, as the curve drawn through the points of Fig. 1 tend to show, the curves of Fig. 2 would be horizontal, straight lines. The divergence of these curves from such straightness indicates variation of internal sheet structure with thickness at constant solid fraction.

In considering possible reasons for the form of these curves, one point to remember is that they were obtained indirectly, by interpolation of data on a porosity-solid fraction-basis weight series of curves, and contain any errors that may result from the method used.

The increase in porosity with increase in sheet thickness at higher solid fractions may be due to an effect of fiber arrangement in the sheet, which possibility agrees with the effects observed in strength tests of similar sheets; the variation in fiber arrangement comes from the fact that sheet thickness was controlled by changing the consistence in the deckle box.[3] Extent of orientation perpendicular to the sheet surface can affect the form of the air passages, and thus their equivalent radius. The different curvature of the curves o fFig. 2 at low solid fraction may indicate an effect such as that which would be obtained by sliding two identically perforated plates over each other. With all the holes of both plates in register, the air transmission would be nearly as great as for one plate. With all out of register, the air transmission would approach zero. Such an effect could well occur when the amount of pulp in a fixed area of sheet is increased either by increase of thickness at constant solid fraction or by increase of solid fraction at constant thickness.

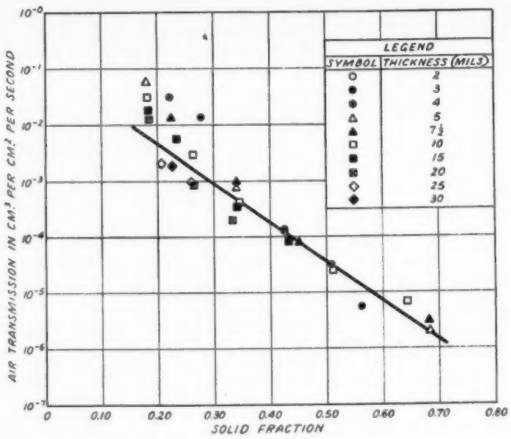

FIG. 3.

Relation of Air Transmission to Solid Fraction and Thickness of Test Sheets.

Air Transmissibility and Solid Fraction

The air-transmission values, all corrected to standard conditions, are plotted in Fig. 3 against solid fraction for several thicknesses of sheet. This figure shows the actual volume of air passing through a definite area of sheet under fixed conditions, which is usually the quantity of prime importance. These air-flow values, of course, are also the basis on which the equivalent pore radii already presented were calculated.

The air transmission, as Fig. 3 shows, increased rapidly with decrease in solid fraction. At solid fractions higher than about 0.40, thickness of sheet appears to have no effect on air transmission. At lower solid fractions, the thinner sheets transmit more air than would be expected from a continuation of the graph drawn for the sheets of higher solid fraction, that is, the points lie above the graph. The structural differences that may be the cause of this behaviour have already been mentioned.

The solid fractions of a series of commercial papers, which were determined in other work,[4] were chiefly 0.40 or more. Hence in an actual application of the results of the present work a simple relation between solid frac-

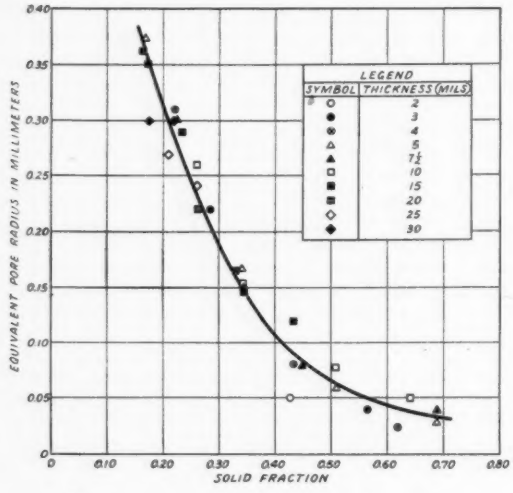

FIG. 1.

Relation of equivalent Pore Radius to Solid Fraction and Thickness of Test Sheets.

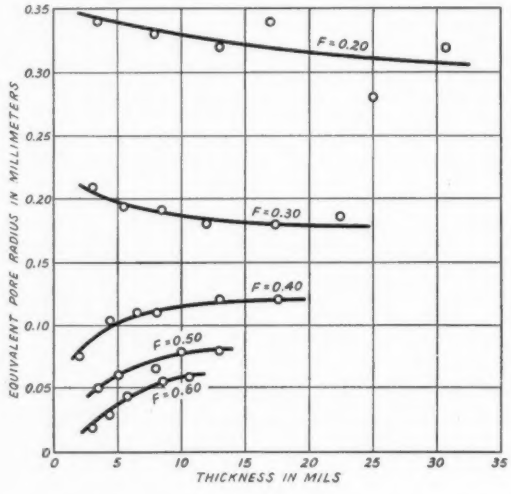

FIG. 2.

Variation of Equivalent Pore Radius with Thickness in Test Sheets of Constant Solid Fraction.

tion and air transmissibility, quite uncomplicated by thickness effects, might be expected.

As already pointed out, the relations presented were obtained with simple test sheets, that is, waterleaf, containing no loading, size, or alum, made from a single unbeaten pulp. Beating, sizing, and loading must all have some effect on porosity and air transmissibility and without additional experiment it is not possible to say whether the relations shown thus far are generally valid in either a qualitative or a quantitative way. That definite relations do exist between sheet structure as affected by conditions of production and processing, on the one hand, and the sheet property of porosity on the other, however, is definitely shown. Through the discovery and application of such relations it will eventually become possible to design a sheet of paper, and by selection of material and control of machine variables to produce the sheet designed, which will possess exactly the properties necessary for a specified use.

Conclusion

The study here reported has shown that the porosity or air transmissibility of paper sheets varies rapidly with change in the solid fraction of those sheets. Over a definite range of solid fraction, the air transmission is dependent on solid fraction alone and shows no significant variation with change in thickness, which corresponds to change in ream weight, at constant solid fraction.

Since most commercial papers fall within the range in solid fraction for which air transmissibility is independent of thickness, a simple means of predetermining the porosity of paper through control of solid fraction is indicated.

[4] Hrubesky, C. E., and Billington, P. S. Paper Trade J. 93, No. 7, 42-4 (Aug. 13, 1931).

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papnieau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

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Bleaching

Electrolysis of Sodium Chloride. Opfermann. Paper-Fabr. 30, No. 9: 100 (Feb. 28, 1932).—Discussion of the advisability of installing an electrolytic plant for the production of chlorine and sodium hydroxide in a pulp and paper mill. The author refutes certain arguments in a previous article on this subject.—J. F. O.

The Annual Report for 1931 over the Bleaching of Pulp. Ladislav Rys. Zellstoff Papier 12, No. 3: 109-111 (March, 1932).—A complete report, including a comprehensive bibliography, on the investigation of the bleach liquor, the carrying out of the bleaching process in stages, a review of the patents and lastly a general critique.—J. F. O.

Compressed Air Conveyance, Bleach, Supply Containers, Removal and after Treatment of of Half Dried Stock. W. Schmid. Papier-Fabr. 29, No. 48: 762-765 (Nov. 29, 1931).—Compressed air conveyors offer possibilities for simultaneous bleaching and feeding the half dried stock for after treatment processes.—J. F. O.

Concerning the Drying of Paper and Felt and the Removal of the Vapors by Means of Warm Air. Reinhard Schulze. Wochbl. Papierfarb. 62, No. 48: 1125 (Nov. 28, 1931).—J. F. O.

Concerning the Drying of Paper and Felts and the Removal of the Vapors by Means of Warm Air. Papier-Fabr. 30, No. 7: 78 (Feb. 14, 1932).—The author states that the blowing of warm air of 80 to 120 deg. C. through the drier felt, as advocated in a previous article, is injurious to the felt. Others say that the temperature of the air blown through should depend on the amount of moisture in the felt.—J. F. O.

Concerning the De-watering of oBard in the Hydraulic Press. W. Schmid. Papier-Fabr. 30, No. 10: 112-114 (March 6, 1932).—Description of the various kinds and ways for the dividing of piles in the hydraulic press, and the purpose of the same.—J. F. O.

Apparatus for Drying Coated Paper. George B. Bailey assignor to Thermox Incorporated. U. S. pat. 1,-847,915 (March 1, 1932)—The drying chamber is formed as a series of flat nozzles discharging into one another. Owing to the venturi effect, the heated air which is introduced into the chamber along with the paper to be dried, and which accompanies the latter through the whole length of the chamber, prevents the paper from coming into contact with the walls of the chamber.—A. P.-C

Pulp and Paper Testing

Progress Made in the Year 1931 on the Testing of Pulp and Paper. Report from the State Testing Laboratory. Zellstoff Papier 12. No. 3.—A resume of the improvements and new methods given out in 1931 for the testing of pulp and paper is presented. Among the tests discussed are, microscopic, porosity, bursting test, evaluating of printing papers, finish and whiteness, chemical tests, degree of decomposition, pentosane determination, copper number, and rosin and fat determination, etc.—J. F. O.

A Method for the Determintation of the Degree of Decomposition of Unbleached Sulphite Pulp by Means of Chlorine Water. Hazime Okada. Cellulosechemie 13, No. 2: 33-35 (Feb. 7, 1932).—A determined quality of chlorine water of known strength is added to 2.5 grams of pulp, the mixture is shaken for 1 hour and kept cool by means of ice; the excess of chlorine is back titrated with sodium thiosulphate. Experimental results show that the error does not exceed 0.001 gram of chlorine.—J. F. O.

Quick Ash Determination Balance. W. Kratschmar, Merseburg. Wochbl. Papierfabr. 63, No. 11: 207 (March 12, 1932).—Description and general discussion of the balance.—J. F. O.

Investigation over the Methods for the Determination of the Degree of Decomposition (Cooking) and the Strength Properties of Pulps. G. K. Bergman. Papier-Fabr. 30, No. 11: 121-126 (March 13, 1932).—The degree of decomposition is judged from the chlorine consumption, the amount required to give the pulp a good white color. The Bergman Number, Enso, Tingle and Bjorkman methods are compared and their values converted into per cent chlorine required. As a means of evaluating the strength of the pulp, the following formulas are presented, Tearing Surface = $\frac{\text{tearing resistance in grams}}{\text{the weight of a square meter in grams}}$ and, Bursting Surface = $\frac{\text{bursting pressure in lbs. / sq. in.} \times 0.07031}{\text{the weight of a square meter in grams}}$.

A table is given using the above values for various pulps tested in the Lampen mill and in a beater.—J. F. O.

Testing of Pulp for Strength. Wochbl. Papierfabr. 63, No. 17: 323,324 (April 23, 1932).—General discussion of the methods used in the various pulp producing countries.—J. F. O.

Accelerated Aging Test for Paper and Permanence Studies of Current Commercial Book Papers. B. Schulze. Wochbl. Papierfabr. 63, No. 12: 225-226 (March 19, 1932).—Results from aging paper at different temperatures and durations. The papers are classified in four groups according to their test after aging.—J. F. O.

The Relation Between the Basic Weight and the Strength of Paper. Zellstoff Papier 12, No. 5: 195 (May, 1932).—Tables are given showing the relation between the basic weight and the strength of the paper.—J. F. O.

A New Arrangement for Testing the Suitability of Paper. T. Hamburger. Papier-Fabr. 29, No. 44: 693-96 (Nov. 1, 1931).—One of the better methods for determining the surface of paper is described. The apparatus which was designed and patented by professor Riesenfeld, consists of an air tight glass enclosure which contains an hair hygrometer, a thermometer and a strip of the paper being tested. The expansion and contraction of this strip of paper is measured at different relative humidities. Air blown through a Woulf bottle which contains different solutions according to the humidity desired, is then led into the apparatus. Magnesium chloride gives a humidity of about 43 per cent, ammonium chloride 65, meta phosphoric acid about 20 per cent, etc.—J. F. O.

Air Dry Equals 88 Per Cent Absolute Dry. Alfons Schahle. Wochbl. Papier-Fabr. 63, No. 4: 60-62 (Jan. 23, 1932).—The author reports the results obtained from tests made on various pulps and paper to see how close they would come to 88 per cent absolute dry.—J. F. O.

A New Dye for the Microscopic Determination of the Content of Ground Wood, or Pulp in Paper. Bruno Schulze. Wochbl. Papier-Fabr. 62, No. 52: 12-18 (Dec., 1931).—The State Bureau of Testing of materials, Berlin, recommends a method for the determination of ground wood in paper. A mixture of two substantive dyes, brilliant congo blue 2RW and cotton brown N (I. G.) are dissolved separately in disstilled water, 1 part, in 70, and each is then added to 6 per cent solution of sodium sulphite in the ratio of 1:1:1. The fibrous material is cooked in the mixture and washed on a screen of at least 900 meshes per square centimeter. The ground wood is chestnut brown and the chemical pulp is blue.—J. F. O.

New Research "Flour Tester." Per Klem. Papier-Fabr. 30, No. 10: 109-111 (March 6, 1932).—An apparatus devised by B. Hurum to determine the amount of wood flour in ground wood, is changed and made more accurate by the author. The method is described in detail.—J. F. O.

PH and Chlorine Determination Apparatus. Zellstoff Papier 12, No. 3: 118 (March, 1932).—A "Enslow-Schlitten" colorimeter for the determination of the pH and a colorimeter of the same kind for the determination of chlorine is described.—J. F. O.

The Determination of Specific Weight of Board and its Relation with Millimeter Thickness and the Number of Sheets per Pile. Eberhard Jeittles. Wochbl. Papier-Fabr. 63, No. 19: 361-362 (May 7, 1932).—Specific weight is understood to be the relation between the weight of a square meter and the thickness. The application and values of specific weight are given with formulas for calculating the number of sheets in the pile.—J. F. O.

Method of Determining the Properties of Paper on the Paper Machine. Frederick A. Pearson. U. S. pat. 1,849,881 (March 15, 1932).—A source of light (*e.g.*, an electric light) and a light responsive device (*e.g.*, a photo-electric cell) are mounted on separate carriages movable along parallel trackways located on opposite sides of the sheet. Means are provided for moving the two carriages synchronously across the width of the sheet. The device shows up any variations in the translucency, and hence in the weight or thickness, of the sheet.—A. P.C.

Slowness Tester for Paper Stock. George F. French assignor to Riegel Paper Corp. U. S. pat. 1,838,614 (Dec. 29, 1931).—The apparatus is preferably located somewhat below the point at which the stock consistency is to be determined, so that the stock may be fed to it by gravity. The stock is fed upwards against a screen and the water passing through the screen is delivered into a standpipe having a small outlet insufficient to permit the water to discharge as fast as it comes from the screen. A certain hydrostatic pressure therefore builds up in the bottom of the standpipe and is recorded by a suitable device. A cam-operated electric circuit automatically opens and closes a series of valves for emptying and flushing the apparatus at close intervals, so that a determination is carried out, say, every 3 min. It is claimed that the results are but little affected by moderate variations in consistency.—A. P.-C.

Specialties

Fire-proof Impregnations. Papier-Fabr. 29, No. 46: 732 (Nov. 15, 1931).—Discussion of the various substances which can be used for impregnating paper and board to render it fire-proof. Some materials which gives fire-proof qualities are injurious to the board, other substances cannot be used because of their excessive cost. Water glass is well adapted for fire-proofing.—J. F. O.

Straw Board. W. Postl. Wochbl. Papierfabr. 62, No. 44: 1033-35 (Oct. 31, 1931).—The softening process for the cut up straw is described. In countries with a warm climate, it is customary to treat with lime in pits. In small mills located in cold climate, the straw is cooked with calcium liquor without excess pressure, and in mills in northern Europe, the chopped up straw is cooked with caustic soda under 3 to 4 atmospheres pressure. The coloring and use of the straw paper is also discussed. —J. F. O.

Eternite or Durabest. R. O. Jager. Wochbl. Papier-Fabr. 63, No. 2: 28-30 (Jan. 9, 1932).—The manufacture and uses of eternite are fully described. Eternite consists of asbestos fibers and a suitable cement in the ratio of 1:6-7 and is made on a machine similar to a board machine. The board is then compressed under a pressure of 300 kilogram per square meter.—J. F. O.

Transparent Viscose Foil (Cellophane, Transparit, Heliozell), Its Manufacture and Use. M. Halama. Wochbl. Papier-fabr. 62, No. 48: 1119-1124 (Nov. 28, 1931).—A comprehensive description of the general process for the manufacture of cellophane.—J. F. O.

Jacquard Board. Wochbl. Papierfabr. 63, No. 5: 88, (Jan. 30, 1932).—Several authorities give their viewpoints as to the raw material to use and the method of production for Jacquard board.—J. F. O.

Machine for Making Composite Boards. George W. Swift, Jr., assignor to George W. Swift, Inc. U. S. pat. 1,837,841 (Dec. 2, 1931).—According to Swift's U. S. pat. 1,492,490, of April 29, 1924, both facing sheets of a double-faced corrugated board and substantially simultaneously applied to the oppositely presented crowns of a corrugated web around the periphery of a main applying roll, which serves also as a measuring roll for cutting off successive lengths from the completed web of double-faced board. According to the present invention the liner webs are applied to opposite faces of the corrugated web in different successive stages prior to the heating stage, and the finished composite board is fed to periodically operated cutters under the measured feed and constraint of only one of the liners (preferably the bottom one) prior to its union with the others.—A. P.-C.

Composition Strips Suitable for Use in Paving or Building Construction. Albert C. Fischer. U. S. pat. 1,846,325 (Feb. 23, 1932).—Layers of plastic material such as rubber or bituminous composition are superposed on a sheet of material such as felt saturated with waterproofing material, and strips thus formed are then superposed on each other to form strips or other articles of desired thickness.—A. P.-C.

Thick-Butt Shingle and Process of Making Same. Harry Allen assignor to The Barrett Co. U. S. pat. 1,852,066 (April 5, 1932).—A number of sheets of varying widths are made on the usual multi-cylinder machine and are combined with their longitudinal center lines coinciding, and the multiple ply sheet thus produced is slit along its center to form two sheets decreasing regularly in thickness from one edge to the other. The sheets are then impregnated, surfaced if required, and cut into shingles or shingle strips.—A. P.-C.

Mulch Paper. Max Cline and Ralph A. Masten assignors to International Paper Co. U. S. pats. 1,846,185 and 1,846,186 (Feb. 23, 1932).—*No. 1,846,185*—Paper is first impregnated with a water-soluble salt having fungicidal properties such as copper sulphate, the metal radical of the salt is then precipitated upon the fibers of the paper, as by the action of caustic soda or sodium carbonate, the acid radical of the salt is then precipitated on the fibers, as by with barium chloride, and the paper is further impregnated with a bituminous material such as asphalt or tar. *No. 1,846,186* relates to a mulch paper coated with a bituminous material such as asphalt and provided with a superficial coating of powdered sulphur.—A. P.-C.

Dyeing Coated Paper for the Printing and Packing Industries. Geo. Rice. Dyer, Calico Printer 67:131 (1932); C. A. 26, 3376.—A brief description of the types of coated papers and cardboards in use and a discussion of the importance of color fastness and types of dyestuffs to use.—C. J. W.

Reworking Blotting Paper. P. Woodhead. Bum. Prom. 11, No. 2:15-25 (1932); C. A. 26, 3376.—Woodhead reviews patents and methods in use for reworking of blotting paper.—C. J. W.

A Patented Device for Hydraulic Roll Calenders and Super-Calenders for the Paper Industry, for the Purpose of Varying the Pressure of one Side of the Calender Against the Other. Walther Schrey. Papier-Fabr. 29, No. 51/52; 914 (Dec. 22, 1931).—Variations in the thickness of the paper makes it necessary to vary the pressure on the ends of the super-calender to finish it equally throughout the width of the paper. This can not be done on the ordinary calenders but it is possible with this patented calender device.—J. F. O.

Concerning Chippers. A. St. Klein. Zellstoff Papier 12, No. 5: 193-195 (May, 1932).—A comprehensive review of all valuable data concerning chippers. Of great importance is that the knives must always be sharp. Some knives are sharpened to a 42 plus 20 degrees. The speed of rotation varies considerably, from 160 to 350 r.p.m. The length of the chips varies in inches from 1¼ to 1¾ for the strongest pulp, for newsprint pulp ¾ to 1 and for easy bleaching pulp ½ to ¾. A formula is given for the production of a chipper. Data is compiled with all pertinent information from chippers in 13 mills.—J. F. O.

Machinery

Installations for the Removal of Fog or Mist. Otto Th. Koritnig. Zellstoff Papier 12, No. 4: 159-161 (April, 1932).—Causes and ways for the removal of mist from the paper machine room.—J. F. O.

Valuable Innovations in Electrical Technology in the Paper and Pulp Industry. W. Kuhl. Papier-Fabr. 29, No. 46: 725-732 (Nov. 15, 1931).—The following topics were discussed, technical control systems, beater regulation, drives for paper machines, calender drive, winders and shop machinery.—J. F. O.

Electrically Operated Valves. Wochbl. Papierfabr. 63, No. 4:62-64 (Jan. 23, 1932).—The need for electrically operated valves is shown with illustrations and applications.—J. F. O.

Progress Made in 1931 in the Construction of Paper Machines. F. Groessler. Zellstoff Papier 12, No. 3: 116-118 (March, 1932).—Satisfactory improvements and new ideas in the construction of paper machines are described, such as the universal adoption of suction rolls and suction presses in news print machine, the new types of the drives for the drying cylinders, and the improvement in bearing lubrication. The increase in width of fine paper machines, one of 5 meter screen width is described. The use of very large diameter for the finishing of wrapping paper, one of 4.2 meter diameter finishing cylinder is shown. The complete equipping of a machine with roller bearings is discussed.—J. F. O.

Review of the Electrical Technology for 1931. P. Weiske. Zellstoff Papier 12, No. 2: 67-69 (Feb., 1932).—The following were discussed; alternating current, synchronous motors, automatic switch, coupling for a calender drive, quick regulator for wood grinders, and more.—J. F. O.

Regulating Drives in the Paper Mill and the Question of the Most Suitable Distribution of Direct Current. Karl Hock. Papier-Fabr. 30, No. 7: 73-78 (Feb. 14, 1932).—The conditions for the drive of the most important power machines with varying r.p.m. in a paper mill and their requirements on electrical control are discussed. The properties and the possibilities for using the various electrical regulating drives are given and it is shown that despite the advance made in the regulatable alternating collector motor the direct current also comes into consideration. In conclusion it is shown where drives utilizing each type of current is best adapted.—J. F. O.

Belts and Rubber Conveyors in the Paper and Pulp Industry. Max Knopff. Wochbl. Papierfabr. 63, No. 19: 362 (May 7, 1932)—General description and use of rubber conveyors, including advantages.—J. F. O.

The Wearing Quality of Dryer Felts. Wochbl. Papierfabr. 63, No. 15: 284-285 (April 9, 1932).—Tension in dryer felts is uneven because the center is more moist than the edges; removing this trouble by having a smaller diameter at the center of the dryers is not good practice. New wet felts are at first not as efficient in the removal of water since the felts contains some fats. Some felts deteriorate because of the presence of certain bacteria.—J. F. O.

The Wearing Quality of Dryer Felts. Johannes Bartsch. Wochbl. Papierfabr. 63, No. 19: 361 (May 7, 1932).—The principal cause for the deterioration of felts is due to the alum splitting off sulphuric acid by hydrolysis; giving an actual pH value of 3.0 and even lower. Tests conducted by the textile institute are discussed.—J. F. O.

Bark Peeling Machine. Walter L. Mingledorff. U. S. pat. 1,847,971—(March 1, 1932).—The log is supported at both ends and rotated, and a rotary cutter travels along the length of the log.—A. P.-C.

Blow-Pit. Hobert W. French assignor to Hammermill Paper Co. U. S. pat. 1,840,774 (Jan. 12, 1932).—The blow-pit is constructed in the form of an ellipse. There is a false bottom made of perforated tiles, except for an untiled portion forming a sump from which the stock is removed from the blow-pit. The water is introduced through an opening at one side of the end, so that it enters the blow-pit practically tangentially.—A. P.-C.

Pulp Digester with Forced Circulation. Einar Morterud. U. S. pat. 1,837,985, (Dec. 22, 1931).—The Screen or sieve at the end of the intake pipe of the circulating pump is in the form of a ring and is located some distance above the bottom of the digesters, *e. g.*, just below the cylindrical portion of the digester. As close as possible to the bottom of the digester is the screened outlet of a pipe connected to the pressure side of the circulating pipe, to obtain circulation in the lower cone of the digester.—A. P.-C.

Screw Press for Dewatering and Washing Stock. Richard T. Lang assignor to American Voith Contact Co., Inc. U. S. pat. 1,838,996, (Dec. 29, 1931).—Obstructing means are provided at the discharge end of the rotating tube to prevent the pulp from turning around with the tube; and at the same time the pulp is divided into separate streams before it leaves the outlet of the screw press. A plugging device is provided at the outlet of the press to control the density of the discharge pulp; and in connection with the plugging device and in its immediate vicinity rotating cutting means are used which disintegrate the pulp after it has passed the obstructing means and break it up into small particles which leave the outlet of the press freely.—A. P.-C.

Apparatus for Cleaning Paper Stock. Frank C. Ladd assignor of one-half to Franklin G. Neal. U. S. pat. 1,846,522, (Feb. 23, 1932).—The floor of the riffler or sand trap consists of an endless felt with long nap, which slowly travels in a direction opposite to that of the pulp. At a point of its travel outside the riffler, the felt is thoroughly cleaned before it re-enters the riffler box.—A. P.-C.

Combined Knotter and Coarse Screen. John Stadler. U. S. pat. 1,843,791, (Feb. 2, 1932).—The screen consists of a perforated cylinder with a free inlet opening at one end. This end is provided with a ring which is supported on its internal surface by a number of rollers located above the level of the stock in the screen. The outlet is provided with a casting having spaced arms disposed radially to a pivot support on suitable bearings, so that there is substantially no obstruction of the lower half of the cylindrical screen, which is rotated by mechanism positioned above the level of the stock. An internal shower pipe, cantilevered from and supported by the inlet casting, permits the use of large quantities of low-pressure water so that the tailings are free from fine fibers. A spiral baffle (of uniform or irregular pitch) around the inner surface of the screen provides a fixed path along which the stock is caused to travel at a predetermined speed.—A. P.-C.

Wet Machine or Cylinder Paper Machine. Charles W. Nelson assignor to Paper Patents Co. U. S. pat. 1,839,249, (Jan. 5, 1932).—A dewatering roll is yieldably pressed against the cylinder mold just above the point where it emerges from the stock. The roll consists of a hollow cylinder with alternate circumferential ridges and grooves (preferably forming a spiral) on its outer surface, and is covered with a wire cloth.—A. P.-C.

Suction Box for Pulp and Paper Machines. John A. Dickinson. U. S. pat. 1,838,988, (Dec. 29, 1931).—The suction box is of sheet metal construction and is enclosed on all sides except the top which is entirely open. Extending across the width of the box are a number of spaced parallel web members which extend close to the open top of the box. A number of rolls, *e. g.*, of hard rubber, are supported between adjacent web members, so that the felt or wire in its passage over the suction box is supported upon rolling supports.—A. P.-C.

Process for Removing Resin from Pulp. Milton O. Schur and Royal H. Rasch assignors to Brown Co. U. S. pat. 1,847,311, (March 1, 1932).—The rosin is extracted from the pulp while in aqueous suspension by means of a solvent (preferably miscible with water) while the suspension is being passed through and its water content is first displaced with solvent and then the solvent in turn with water, in a continuous countercurrent apparatus such as the one of Brown, Moore, Parker and Martinson's U. S. pat. 1,421,664, (July 4, 1932).—A. P.-C.

System and Device for Sorting and Distributing Waste Papers. Nels H. Sandberg assignor to Waldorf Paper Products Co. U. S. pats. 1,847,263, 1,847,264 and 1,847,265, (March 1, 1932).—The three patents provide various arrangements of conveyors, sorting belts and bins designed to simplify the sorting of waste papers, increase the efficiency and output of sorters and permit of compact arrangement of the equipment so as to reduce the floor space required to a minimum.—A. P.-C.

De-Inking Machine. Grant Hammond assignor to The Reclamation Co. of America. U. S. pat. 1,846,683, (Feb. 23, 1932).—A horizontal cylindrical shell is provided inside with: (1) a number of bars parallel and close to the inner wall of the shell; (2) a number of bars parallel to and some distance from the shell; (3) an "expeller" of generally oval shape but having relatively sharp edges at the ends of the major axis. The two sets of bars and the expeller are rotated at different speeds and (or) in opposite directions, to ensure thorough agitation. The bottom of the shell consists of a perforated false bottom. Water and liquor inlets and outlets and a stock discharge opening are provided. De-inking is effected by means of an alkaline solution and requires about 10 to 20 min. Washing is carried out in the machine and requires about 5 to 10 min.—A. P.-C.

Paper Machine. John D. Tompkins and Frederick H. Fuller assignors to Tompkins, Hawley, Fuller Co. U. S. pat. 1,843,656, (Feb. 2, 1932).—A felt is caused to overlie the fourdrinier wire from the suction boxes to the couch roll. Dry air blasts are provided directly over the suction boxes to increase the water removal at the suction boxes. The felt carries the sheet directly from the wire to the driers, no presses being used.—A. P.-C.

Section of the

COST DEPARTMENT

of the

American Paper and Pulp Association

Edited by Thomas J. Burke C. A. Director Cost Dept.

Deflating The Plant Accounts*

By C. Oliver Wellington[1]

Depreciation charges against earnings rarely have been comparable as between two corporations of similar size in the same industry, and often have not been consistent year by year for the same corporation. In annual reports for 1931 we find situations varying from no depreciation at all, "because the plants had previously been written down to $1," to a continuation of charges on the same basis as in 1929, when values were high and plants were being operated at capacity.

With this wide diversity of practice, it seems worth while for the business men, bankers, and accountants to review the various factors involved, to see whether substantial agreement cannot be reached as to desirable procedures for 1932 and later that will be in accordance with the facts and fair to all concerned—the stockholders, the management, the bankers and other creditors, and the competitors.

Adjustments of plant accounts on corporate books, with or without corresponding adjustments of capitalization, have become very popular. An examination of the annual reports of 225 of the larger companies shows that in the last two years 43 have made substantial reductions.

The plant accounts include the tangible fixed assets of a business—land, buildings, machinery and equipment—the assets which a business uses to produce the goods made and sold.

Assets of High Book Value

Plant accounts as they stood at the end of 1929 included some assets of very high book values, representing:

A—Construction or purchase in years of high cost;

B—Acquisition at "new era" prices in connection with mergers, consolidations, etc., or

C—Revision of plant values as a result of appraisals made in years of high reproduction costs.

As a result of one or more of these causes, the plant accounts were in total stated at values far above their present worth in 1932 and far above any value that will seem reasonable for many years to come, even if all of the plant assets could be used effectively in the conduct of the business. Today, in 1932, any asset or group of assets can probably be replaced with others of at least equal efficiency for a much smaller total cost than the figures on the books.

In addition to this substantial reduction in current values, the vast expansion in productive capacity from 1922 to 1929 has left a total capacity in practically every industry far greater than the consumption, not merely in a period like the present, but for what, in sober view of the situation, seems likely to be total consumption when business again becomes "normal". By this time there are few business men who think of the years 1928 and 1929 as "normal".

Factors To Consider

Even if plant accounts are reduced to current values for the property now in existence, we find included in this property a substantial portion, which is idle or partially idle. Such property is unlikely to ever resume profitable operations, because, even if abnormal consumption occurs again, these particular plant facilities will by that time probably have become obsolete, through intense competition and improvements in plants and processes. In deflating the plant accounts, therefore, we must consider:

A—The reduction, to approximate current values, of the assets, that probably will be used.

B—The reduction, to scrap or sales values, of those assets that probably will not be used.

The two kinds of adjustments to be made, as above indicated, should be worked out carefully as a result of engineering studies and forecasts of business to be expected, and not be used merely on somebody's estimate or some total that the management desires to reach as an adjusted figure for plant values.

Whether deflation of the plant accounts will require or suggest revision of the capital structure of the company will depend upon how adequate have been the reserves for depreciation in the past, and therefore to what extent the net plant values exceed current values, and also upon the present capital structure. At this time, however, we are principally concerned with the treatment of the assets and the corresponding charges against current income.

In analyzing the methods followed by the 43 companies which have made substantial changes in their plant accounts, we find that they generally fall into one or more of eight groups.

1—Writing down all plant and equipment to a nominal value.

2—Deducting round amounts from the plant and equipment accounts and evidently applying the regular rates of depreciation to the remaining balances.

3—Reducing higher appraisal values to original cost.

4—Using lower rates of depreciation.

* Robert Morris Associates Bulletin

[1] Partner, Scovell, Wellington & Co.

5—Transferring idle and inactive plant facilities to separate accounts and making drastic write-offs therefrom.

6—Completely eliminating values representing abandoned and obsolete plant and equipment.

7—Having appraisals made of plant and equipment, either by independent appraisers or by the company's own engineering staff, and adjusting the book values to conform with such appraisals.

8—Method employed not disclosed.

In many cases the compelling reason for deflation of the plant accounts has not been to reduce the asset values on the balance sheet but to reduce the annual charge for depreciation on the operating statement. This is, to a certain extent, a sound reason for a change, but whenever a change is made in depreciation the burden of proof is on the management of the company to show that the adjusted plant values and adjusted charges for depreciation are in accordance with the current facts and are not so handled as to make the showing on the operating statement more favorable than it really is.

What the Management Should Disclose

The management therefore should disclose, to the stockholders and others interested, the extent of the adjustments, the factors taken into consideration, the professional counsel followed, and the final results in values and current depreciation charges, as compared with the values and charges before the adjustments were made.

In the years from 1922 to 1929 when profits were high, there was often suspicion that the annual report showed less than the true profits earned. Management today must be particularly careful that there is no suspicion of a contrary situation, where inadequate charges for depreciation on the plant assets that are used will make the operating results appear better than they really are.

To consider in order the merits of the various plans listed above, the first seems entirely indefensible. J. B. M. Hoxey, executive assistant of the Committee on Stock List of the New York Stock Exchange, has expressed the situation clearly in the words that "statement of plant assets at one dollar does not change the fact of the actual depreciation being sustained". Even with a lower level of production and sales, there are substantial amounts of land, buildings, machinery and equipment actually used in production and distribution of the goods. These assets have a reasonably fair current value at the present time, and a fair depreciation of the value of the assets now used, spread over their reasonable remaining life, is a definite fact which should be reflected in a definite charge to the cost of production and distribution and included in the operating statement. Any stockholder, banker or accountant understanding the facts would certainly deduct an estimated depreciation in order to determine what the company really made or lost, and it would seem much better for the management, in possession of all the facts, to do this rather than leave those interested to make their own guesses as to the depreciation deduction that should be made.

A Step in the Right Direction

Plans 2 and 3 represent a step in the right direction, but neither of them effectively meets the current situation. Each leaves in the dark the management, the stockholders and others interested. There is no assurance that the plant accounts, after the reduction, are down to current values, even if all the plant assets can be used, and such adjustments ignore the important question of plant assets which in total or in part are idle and are likely to remain idle.

Companies which follow plan 2 or 3 leave the impression of a job half done and make it necessary for one studying the operating statements to apply his own judgment as to the adequacy of the depreciation charge without having the necessary facts on which to base a fair judgment. In general, one would surmise that the companies following plan 2 or 3 have a depreciation charge greater than would be fair if all the facts involved were known and recognized.

Plan 4 is merely an attempt to recognize the fact that the charge for depreciation on the 1929 basis is too high under current conditions. The method of charging lower rates, however, is indefensible, as the only proper basis for lower rates is an extension of the estimated life of the assets. Presumably there is nothing in the change of business conditions that will extend the life of the assets; on the contrary, the life is more likely to be shortened.

Some companies have made smaller total charges for depreciation, based not on lower rates but on a reduction of operation and of units of products made. Such a reduction has considerable merit, but it should be based on careful study of present fair values, probable life, and probable units of production that will be made during that life, resulting in a depreciation per unit of production which can be consistently followed. In the cases reviewed and classified under plan 4 there is no evidence of any such careful determination and, therefore, no assurance that the operating statements on the revised basis include a fair charge for current depreciation.

Segregating Used from Unused Property

Plans 5 and 6 are similar and may be considered together. In each case recognition is given to idle and inactive plants which do not contribute to the business as currently done, or as expected to be done within the next few years. For many years, when cost systems have been prepared under professional guidance, the best practice has been to analyze the items of plant so as to segregate the used from the unused property, with the intent of charging to the cost of the product not the fixed charges on the entire plant but merely the fixed charges on the used plant. Plans 5 and 6 simply carry this idea a step farther, and suggest the introduction of this special classification of plant assets into the financial records as well as the cost records.

If a distinction between useful and inactive plant assets is carefully made, taking into consideration the various factors involved, the plan of separate classification of idle and inactive plant assets is sound and should be followed. Whether book values of such plant assets should be written off entirely, or only in part, depends upon the kind of asset and its probable sale or scrap value. In theory, such assets have some value and that value should be carried on the books and only the balance charged off.

One important purpose of this separation is to eliminate from the active plant account the assets that are not to be used, so that depreciation figured on the remaining assets will represent a fair current charge against the product made. It is essential, if plans 5 and 6 are to be complete and satisfactory, that the book value of active and used plants be reduced to fair current values and depreciation figured thereon over a reasonable remaining life of such assets. Any depreciation necessary on the written down value of unused plant assets will be charged, not to the cost of the product, but direct to profit and loss as a part of the cost of carrying unused plant and equipment.

The Most Important Method

Plan 7 represents what appears on the surface to be the most satisfactory method of handling the situation. It is important, however, that the appraisal not only show fair

values in use, but, in connection with an engineering survey of the business, make the proper classification of the total assets between those to be used and those to be discarded or sold. It may be desirable, for example, to classify the plant assets in three groups, such as: (1) assets which definitely will be used; (2) assets which are unused but may well be held for future developments, and (3) assets which are unused and may be sold or discarded.

In considering the probable use of plant assets, the engineering study should take into consideration not only the facts available in regard to the particular company, but also those with reference to the industry and possibly related industries, in order to determine a reasonably accurate picture as to what may be expected in the near future, say for example, the next five years.

After the fair values of the plant assets have been determined on a current basis in the proper classifications, the books should be adjusted to reflect the appraisals. In most cases the charge corresponding to the credit to the plant accounts should be to capital surplus or capital stock value. The exact way in which the adjustment should be made will depend upon the legal requirements, upon the existence of any surplus other than earned surplus, and upon the amount of the latter in relation to the adjustment of plant values. In general, such a plant adjustment as we are suggesting should affect earned surplus, if at all, only to a small extent, for if we assume depreciation charges in years prior to 1932 have been adequate under conditions as they then appeared, the operating costs and financial statements have included adequate charge for depreciation, and the earnings as stated have been true earnings. What we now face in effect is a reduction of capital somewhat similar to the reductions in capital that individuals as well as corporations have suffered, and it is hardly logical to charge this reduction against earned surplus. It certainly is not logical to leave the company with a deficit, when what is desired is to bring the plant accounts down to the level of current values, thus giving the management an opportunity to make an operating showing on the new basis, with no unfair load from the past, but with only a fair charge for the property which it uses.

Affects Competitors Also

The principle of a fair charge for the property actually used affects not only the management, the stockholders, the bankers and other creditors, but also the competitors. While it is true that, under abnormal conditions, selling prices are made which ignore any charge for depreciation, as well as many other operating costs, in the long run all these costs must be considered in determining a fair selling price. There is a very strong sentiment, among both business men and economists, that the corporation which sells below cost is injuring not only itself but also its competitors and the community at large. The capitalistic system cannot endure without the making of profit, for it is only from profits that we can obtain the taxes necessary for support of government and social services. Therefore, the man who injures profits for himself and his competitors, by selling below cost is an enemy of society as at present constituted.

To insure sales at a profit, it is necessary to know true costs; and, as one of the important elements of costs is depreciation on the plant and properties, it is necessary that the calculation of depreciation be on a proper and fair basis. Therefore, in considering this question of revision of plant values, the management has a duty and responsibility to see that the revision is based on sound principles and is adequately done.

In most of the discussions on the revision of plant values, emphasis has been put upon depreciation, and the improvement in statements of earnings for later years due to reduction in plant values and depreciation changes thereon. We must not lose sight of the fact, however, that the fixed charges on the plant include insurance and taxes as well as depreciation.

Reduction of Costs, Insurance and Taxes

Deflating the plant accounts should result in a distinct reduction of the costs and insurance and taxes. While it is usually desirable to insure up to 80 per cent of fair value, there is no advantage in insuring above 100 per cent. Therefore, a revision of the plant assets, based on a careful appraisal at current values, with the segregation of idle and obsolete assets and their reduction to scrap or probable sales value, should indicate clearly the insurance to be carried and lead to a reduction in insurance cost.

Local taxes, based on land, buildings, machinery and equipment, and in some states on inventories, have become an increasingly heavy burden. The greatest evil, of course, lies in excessive governmental expenditures which must be raised by taxation, and all unnecessary and improper spending of public money should be attacked forcefully and consistently by all taxpayers, individuals or corporations. Whatever tax levies are made, however, it is necessary for each taxpayer, particularly a large corporation, to see that it is not paying more than its fair share of the tax. Where the annual reports of corporations are available to the general public, the local assessors are bound to be influenced by the amounts shown on the financial statements for plant and equipment. A proper reduction of plant accounts to current values, therefore, can and should be used as an argument with local assessors for reduction of assessed values. Any reduction in taxes helps to bring total manufacturing costs closer in line with current conditions and makes it more possible for the corporation to operate at a profit.

Little Effect on Federal Income Taxes

In considering adjustments of plant values, it should be clear that such adjustments have little effect, if any, on Federal income taxes. The policy of the Treasury Department has been, with modifications in certain industries, to insist upon depreciation on the straight line theory, by which the cost of the asset, less its scrap or residual value, is spread equally over the estimated years of life. For tax purposes, therefore, they have paid no attention to a write-up of plant assets above cost and similarly should pay no attention to a write-down of plant assets below cost. In both cases the depreciation as charged on the books and financial statements will differ from the depreciation deductible in accordance with Treasury Department practice.

There will be a similar difference in practice in regard to charges for obsolescence in addition to depreciation, as the Treasury Department rarely allows deduction for obsolescence unless such obsolescence is definitely known or ascertainable. Presumably property not in use, which the company expects never to use again, should be claimed as obsolete, but the loss may be allowed by the Treasury Department only as the property is sold, or possibly as a deduction at an accelerated rate of depreciation in recognition of the shortening of the probable life of the asset.

The tax problems should be considered very carefully before adjustments of plant values are finally made. It is

to be expected that the depreciation and obsolescence allowable on Federal income tax returns in subsequent years will be substantially greater than the depreciation and obsolescence deduction from earnings on the financial statements, after the plant accounts have been deflated.

Built Up To Take Care of 1928-29

Officers and directors of most companies are facing the fact that plant values and organization were built up to take care of the 1928 and 1929 volume of business, that such volume was not "normal" but very abnormal, and that a reasonable consideration of "normal" forces a reduction of the organization, the plant values, and the inventory values to a substantially lower level.

Readjustment Must Take Place

There is no doubt that readjustment must take place, but a little study indicates that, to make readjustments more than a temporary expedient and have them result in permanent satisfaction, the various factors involved must be studied and the deflation worked out carefully. Professional counsel can be of great assistance in solving the various accounting and management problems, and in assuring the directors and stockholders that the changes made really meet the current conditions.

Joe Pirie Goes With Nekoosa-Edwards

The Nekoosa-Edwards Paper Company of Port Edwards, Wisconsin have recently announced a new line of fine printing papers and the appointment of Joe Pirie as general sales manager of the Fine Paper Division.

Mr. Pirie needs no introduction to the fine paper merchants of the United States. For the past five years he has been associated with the Fox River Paper Company of Appleton, Wis., as sales manager and for the ten years previous he represented the Neenah Paper Company of Neenah, Wisconsin.

Mr. Pirie began his career with the firm of Alexander Pirie and Sons, paper makers at Aberdeen, Scotland. Upon coming to America he joined the Kimberly-Clark Company at Kimberly, Wis. His experience in retail selling of fine paper was gained through service with Bradner Smith & Co. and the Chicago Paper Company, Chicago.

Nekoosa-Edwards Paper Company was established in 1868. More than seven years have been devoted to research, perfection of processes, factory improvements and development preparatory to manufacturing fine printing paper.

In order to gain a supply of pure spring water Nepco lake was formed, covering more than six hundred acres, with a shore line of more than fourteen miles. It has a volume of 23 million gallons and an average flow of more than 100,000 gallons per minute. Nepco Lake is the exclusive property of the Nekoosa-Edwards Paper Company and furnishes water to both the Port Edwards and Nekoosa mills.

The Nekoosa-Edwards Paper Company are also sponsoring one of the most gigantic reforestation projects in the world. At present more than 50,000 acres of selected coniferous trees have been planted and are growing in this man-made forest—more than a hundred million trees, and the planting continues at the rate of about six million trees per year.

Exclusive processes, pure water, control over raw materials, and a background of more than 60 years of paper making, they claim, give their new papers unusual characteristics of strength, formation, appearance and workability.

COST SECTION

Charles W. Shartle Dead

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, September 26, 1932—Death came suddenly last week to Charles W. Shartle, who was widely known in the paper trade by reason of his connection with the gummed paper industry and a machinery company which he founded in Middletown many years ago.

Mr. Shartle was president of the Brown-Bridge Mills, Inc., manufacturers of gummed paper, Troy, Ohio, at the time of his death but for some time he had acted only in an executive capacity, having turned the active duties of the presidency over to his son, John A. Shartle.

Mr. Shartle resided north of Franklin in a handsome country home where he has been at leisure for two years,

CHARLES W. SHARTLE

part of which time he suffered from ill-health. Last week he decided to motor to Wisconsin and it was while on this trip that he was taken ill at Lake Geneva, *en route* to Appleton, and died in a hospital. He was 70 years of age.

Mr. Shartle resided in Miami Valley the greater part of his life. It was almost a half century ago that he founded the business which gave him fame in the paper trade and kindred lines. When he retired from that business he took up the manufacture of gummed paper at Troy, establishing a new concern in that thriving little city in Miami County, Ohio.

He was interested in a welding company in Middletown, and a steel foundry at Houston, Texas, and in other enterprises.

The body was sent to Franklin and funeral services were conducted Saturday, September 24, at 3 p.m., from his late residence. The Rev. Dr. D. E. McKinney, of Springfield, Ohio, and the Rev. William J. Hannum, of the Franklin Presbyterian church, officiated.

The following served as pall-bearers:—Carl Bridge and Adam Bridge, of Franklin; Pierce Bridge, of Troy; Clifford Crawford, John Hamm and Homer Martindale of Middletown, and William R. Fannon, of Appleton, Wis.

Interment was made in Woodside cemetery, Middletown, Ohio.

Mr. Shartle is survived by his widow, six children and three brothers.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 24, 1932

CIGARETTE PAPER

American Tobacco Co., Amer. Shipper, Havre, 100 cs.; Standard Products Corp., Lafayette, Havre, 39 cs.; De Manduit Paper Corp., Lafayette, Havre, 326 cs.; American Tobacco Co., Paris, Havre, 200 cs.; Champagne Paper Corp., Paris, Havre, 45 cs.; L. C. Dever, Saturnia, Trieste, 3 cs.; American Tobacco Co., Pr. Harding, Havre, 100 cs.; Champagne Paper Corp., Sarcoxie, Havre, 122 cs.

WALL PAPER

A. L. Diament & Co., Majestic, Southampton, 1 cs.; Melchior Armstrong & Dessaum, Pr. Harding, Hamburg, 1 cs.; Irving Trust Co., New York, Hamburg, 6 cs.

PAPER HANGINGS

W. H. S. Lloyd, Carinthia, Liverpool, 3 bls.

NEWS PRINT

W. H. Bell, Markland, Liverpool, N. S., 2,984 rolls; ——, Drottningholm, Gothenburg, 21 rolls; Perkins Goodwin & Co., Stuttgart, Bremen, 63 rolls; Parsons & Whittemore, Inc., Stavangerfjord, Oslo, 37 rolls; ——, Stavangerfjord, Oslo, 320 rolls; ——, New York, Hamburg 37 rolls.

PRINTING PAPER

E. Dietzgen & Co., New Britain, Rotterdam, 18 cs.; Japan Paper Co., Aquitania, Southampton, 1 cs.; C. Steiner, Stuttgart, Bremen, 10 cs.; E. Dietzgen & Co., New York Hamburg, 10 cs.; Richard Shipping Co., New York, Hamburg, 4 cs.

WRAPPING PAPER

National City Bank, Cristobal Colon, Bilbao, 98 bls.; F. C. Strype, Westernland, Antwerp, 1cs.; Yardley & Co., Majestic, Southampton, 5 cs.

PACKING PAPER

J. P. Heffernan Paper Co., Westernland, Antwerp, 106 bls.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Carinthia, Liverpool, 8 cs.

FILTER PAPER

C. Schleicher & Schull Co. Inc., Amer. Shipper, Hamburg, 8 cs.; H. Reeve Angel & Co. Inc., Carinthia, Liverpool, 6 cs.; H. Reeve Angel & Co., Inc., Majestic, Southampton, 30 bls, 1 cs.

DECALOMANIA PAPER

B. F. Drakenfeld & Co., Britannic, Liverpool, 6 cs., (simplex); American Express Co., Europa, Bremen, 6 cs.

PHOTO PAPER

J. J. Gavin, Aquitania, Southampton, 5 cs.; American Express Co., Europa, Bremen, 2 cs.

METAL COATED PAPER

Winter Wolff & Co., Amer. Shipper, Hamburg, 3 cs.; K. Pauli Co., New York, Hamburg, 20 cs.; H. W. Robinson & Co., New York, Hamburg, 1 cs.; Taub Hummel & Schnall, New York, Hamburg, 2 cs.

BARYTA COATED PAPER

Globe Shipping Co., Stuttgart, Bremen, 52 cs.

SURFACE COATED PAPER

P. C. Zublke, Westernland, Antwerp, 14 cs.; Gevaert Co. of America, Westernland, Antwerp, 12 cs.; Globe Shipping Co., Europa, Bremen, 4 cs.

COATED PAPER

Happel & McAvoy, New York, Hamburg, 3 cs.

TRANSFER PAPER

F. L. Kramer & Co., Stuttgart, Bremen, 40 cs.

COVER PAPER

International F'd'g Co., New York, Hamburg, 1 cs.

PARCHMENT PAPER

Wilkinson Grey & Co., Ala, Rotterdam, 82 bls.

TRACING PAPER

G. W. Sheldon & Co., Majestic, Southampton, 1 cs.

WRITING PAPER

Globe Shipping Co., Amer. Shipper, Hamburg, 19 cs.

ENVELOPES

Beckhard Simfred & Co., Europa, Bremen, 12 cs.
Beckhard Simfred & Co., New York, Hamburg, 11 cs.

MISCELLANEOUS PAPER

The Borregaard Co., Inc., Drottningholm, Gothenburg, 67 rolls, 59 bls.; P. H. Petry & Co., Drottningholm, Gothenburg, 90 rolls; Keller Dorian Paper Co., Paris, Havre, 3 cs.; American Shipping Co., Paris, Havre, 3 cs.; Rohner Gehrig & Co., Paris, Havre, 2 cs.; International F'd'g Co., Westernland, Antwerp, 4 cs.; P. J. Schweitzer, Excalibur, Marseilles, 16 cs.; W. Bersch, Europa, Bremen, 4 cs.; Wedeman Godknecht & Lally, New York, Hamburg, 14 cs.; International F'd'g Co., Ala, Rotterdam, 9 cs.

RAGS, BAGGING, ETC.

G. W. Millar & Co., Inc., New Britain, Rotterdam, 33 bls. rags; Darmstadt Scott & Courtney, McKeesport, Dunkirk, 41 bls. rags; National City Bank, American Shipper, Hamburg, 30 bls. rags; J. Cohen & Son Inc., Britannic, Liverpool, 21 bls. paper stock; National City Bank, Stuttgart, Bremen, 18 bls. rags; G. Schuster, Morro Castle, Havana, 13 bls. rags; Manufacturers Trust Co., E. Francqui, Antwerp, 339 bls. cotton waste; D. M. Hicks Inc., Pr. Harding, Hamburg, 41 bls. rags; Castle & Overton, Inc., Pr. Harding, Hamburg, 135 bls. rags.

OLD ROPE

——, American Trader, London, 66 coils; W. Steck &

Co., American Shipper, Hamburg, 31 coils; Banco Coml Italiane Trust Co., Cristobal Colon, Coruna, 33 coils; ——, London Corporation, London, 68 coils.

GLUE STOCK, ETC.

——, Stuttgart, Bremen, 100 bags hide glue; ——, E. Francqui, Antwerp, 200 bls. glue stock.

CHINA CLAY

L. A. Salomon & Bro., Britannic, Liverpool, 240 bags; L. A. Salomon & Bro., Britannic, Liverpool, 80 casks.

WOOD PULP

Perkins Goodwin & Co., Drottningholm, Gothenburg, 127 bls. sulphite; Johaneson Wales & Sparre, Inc., Drottningholm, Gothenburg, 480 bls. chemical pulp; Johaneson Wales & Sparre, Inc., Stuttgart, Bremen, 150 bls. wood pulp; Irving Trust Co., Stuttgart, Bremen, 300 bls. wood pulp; Perkins Goodwin & Co., Stavangerfjord, Drammen, 340 bls. sulphite; Irving Trust Co., Stavangerfjord, Drammen, 600 bls. sulphite; E. M. Sergeant & Co., Stavangerfjord, Oslo, 300 bls. chemical pulp; Chemical National Bank, Stavangerfjord, Oslo, 300 bls. sulphite; The Borregaard Co. Inc., Stavangerfjord, Sarpsborg, 168 bls. sulphate; J. Andersen & Co., Saturnia, Trieste, 130 bls. wood pulp; Castle & Overton, Inc., Ala, Rotterdam, 340 bls wood pulp 54 tons; J. Manheimer, Ala, Rotterdam, 50 bls. wood pulp; Gottesman & Co. Inc., Scanyork, Sweden, 6,125 bls. wood pulp.

PULPWOOD

Polarus Shipping Co., E. Maersk, Guysboro, 1,340 cords.

WOOD PULP BOARDS

Irving Trust Co., Saturnia, Trieste, 38 bls.

WOOD FLOUR

State Chemical Co., New Britain, Rotterdam, 715 bags, 30,300 kilos; B. L. Soberski, Stavangerfjord, Frederickstad, 1,770 bags.

ALBANY IMPORTS

WEEK ENDING SEPTEMBER 24, 1932

Amtorg Trading Corp., Fernhill, Archangel, 3,212 cords pulpwood.

PORTLAND IMPORTS

WEEK ENDING SEPTEMBER 24, 1932

Gottesman & Co. Inc., Wanja, Sweden, 5,640 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 24, 1932

Castle & Overton, Inc., Ala, Rotterdam, 340 bls. wood pulp, 54 tons; Gottesman & Co. Inc., Ala, Rotterdam, Sweden, 525 bls. sulphite, 52 tons; Gottesman & Co. Inc., Tampa, Sweden, 1,000 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 24, 1932

National City Bank, London Corporation, London, 98 coils old rope; E. W. Twitchell Inc., Ala, Rotterdam, 87 cs. wrapping paper; D. L. Ward Co., Ala, Rotterdam, 110 rolls news print.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 24, 1932

Congoleum Nairn Co., McKeesport, Havre, 198 bls. rags; S. George & Co., Ala, Rotterdam, 85 coils old rope; International Purchasing Co., Ala, Rotterdam, 63 coils old rope; International Purchasing Co., Ala, Rotterdam, 51 bls. old rope; Gottesman & Co. Inc., Tampa, Sweden, 1,430 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING SEPTEMBER 24, 1932

Chase National Bank, Ala, Rotterdam, 95 bls. bagging.

MONTREAL IMPORTS

WEEK ENDING SEPTEMBER 24, 1932

Lovell & Christmas, Argentina, B. Ayres, 84 bags casein.

Wisconsin's Forestry Campaign

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 26, 1932—In their efforts to bring about reforestation and solve the problem of tax delinquent lands, many counties in Wisconsin have taken advantage of the state's forest crop law and have acquired lands devoted to tree growing for the future pulpwood and timber supply. Among the leaders in the movement are Marinette County with 87,000 acres, Douglas County with 100,000, and Langlade with 27,000 acres. Wood County has about 100,000 acres, which eventually will come under the new law.

Lands are practically tax-exempt while devoted to reforestation, and no levy is made until the timber is cut, when it is assessed on its merchantable value. Counties, however, derive 20 cents an acre annually, half of which is paid by the owner and half by the state. Where large acreages have been acquired by counties, this revenue helps overcome the losses from tax delinquency, and provides money to maintain the forestry projects.

A campaign is in progress in Wisconsin to convert as much as the 10,000,000 acres of cutover land as possible into future forests, with the idea that the source of supply for mills will again be restored and perpetuated.

Syracuse Gets Forest Lands

[FROM OUR REGULAR CORRESPONDENT]

SYRACUSE, N. Y., September 26, 1932.—Several thousand acres of valuable property in the Adirondacks have been presented to the State College of Forestry at Syracuse University by Archer M. Huntington, of New York City, which is regarded as the largest gift of forest land to an educational institution in the history of the state. The property was deeded to the trustees of Syracuse University who designated the forestry college as the recipient. The area comprises several parcels of forest land and lakes situated principally in Essex county and partially in the town of Newcomb.

Amalgamated Tablet Co. Busy

[FROM OUR REGULAR CORRESPONDENT]

FORT EDWARD, N. Y., September 26, 1932.—Normal operations are being carried on at the plant of the Amalgamated Tablet Company, which is employing about 35 hands steadily. A new structure was recently built by the company which is now in use and all available facilities are being used for manufacturing purposes. Since locating here a few years ago the company has grown steadily until today it is regarded as one of the principal industries in the village.

Riegal Paper Corp. Files Complaint

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 28, 1932.—Complaint has been filed with the Interstate Commerce Commission by the Riegal Paper Corporation of New York City against the New York Central Railroad Company. The paper company complains against a specific rate of 25 cents per hundred weight on wood pulp from Dexter, N. Y. to Milford, N. J.

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CANTON, MASS.

Woolen manufacturers since 1856

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, September 28, 1932.

Conditions in the local paper market are showing signs of improvement. Demand for the various grades of paper is better and the volume of inquiries is increasing materially. Sales forces of the leading paper organizations are conducting a strenuous campaign for business and are generally optimistic over the future outlook.

The news print paper market is more active than for some time past. There are a number of inquiries around for future account. However, the price situation continues unsatisfactory and a leading manufacturer has announced a further cut, making the quotation $45 per ton, delivered New York.

Following an announcement of an advance in the price of kraft liner board of $2.50 per ton, other grades of board also reached higher levels. Demand for the various grades of fine paper is gradually expanding. Tissues are moving in good volume. The coarse paper market is steadier and the kraft wrapping paper situation seems to be clearing.

Mechanical Pulp

Conditions in the ground wood market are fairly satisfactory. While demand for both domestic and imported mechanical pulp is somewhat restricted, offerings are not excessive, and the industry is in a sound statistical position. Prices are generally holding to previously quoted levels, without difficulty.

Chemical Pulp

Steadiness prevails in the chemical pulp market. The paper mills are displaying more interest in the various grades and sentiment is apparently on the mend. Contract shipments are going forward in fairly satisfactory volume for the time of year. Prices are generally holding to schedule.

Old Rope and Bagging

The old rope market continues quiet. Demand for domestic and imported old manila rope is light at present. Prices are slightly easier. Foreign manila rope is now offered at from $1.45 to $1.50, f.o.b. New York. The bagging market is fairly steady. Demand for scrap and gunny bagging is fairly persistent. Prices remain unchanged.

Rags

Some improvement was noticed in the domestic rag market. Cotton cuttings are in better request and No. 1 white shirt cuttings, in particular, are steadier, with offerings scarce. Roofing grades are decidedly firmer. Little improvement is reported in the imported rag market and prices continue strictly nominal.

Waste Paper

Board mill demand for the lower grades of paper stock is brisk. Strictly folded news and old kraft machine compressed bales are exhibiting a stronger undertone. The better grades of waste paper are steady. Interest in hard and soft white shavings is well sustained. Book stock is moving in moderate volume.

Twine

The twine market is slightly firmer. As usual at this time of the year, demand for the various grades is increasing and a satisfactory volume of business should be transacted from now on until the end of the year, at least.

New Morris Non-Clogging Pump

Morris Machine Works of Baldwinsville, N. Y., announces the development of a new non-clogging centrifugal pump for handling pulp of both heavy and light consistencies.

This pump presents an interesting evolution from the earliest type of Morris Non-clogging Pump which was placed on the market 40 years ago. This first Morris Non-clogging Pump proved so successful that over 1200 pumps of that type were supplied to the paper industry before it was superseded by an improved Morris design 18 years later. The present design is based upon a rich accumulation of experience with the production conditions and requirements of the paper industry and includes many improvements that provide exceptionally efficient operation.

The suction nozzle, impeller and pump passages are all of special form to secure uniform conversion of the velocity of the material to pressure with minimum friction, slippage or separation of water from pulp.

Impellers of various types and number of vanes have been designed for the different kinds and consistencies of stock. Open impellers are made with sufficiently strong vanes to handle rags, sticks and even blocks of wood without breaking. As an example of the extremely wide passages of the enclosed impellers, it may be noted that an 8-in. diameter ball will pass entirely through the enclosed impeller of a 10-in. pump from suction inlet to periphery. The special impeller which is furnished for exceptionally heavy pulp acts as a screw conveyor, and has proven highly effective in handling the thickest stocks encountered in pulp mill service.

Other important features which have received special attention are balance of end thrust, adequate support for the heavy shaft, convenience of access to the pump interior for inspection and cleaning, and greatest possible economy of maintenance.

Further particulars concerning this pump may be obtained by addressing Morris Machine Works, Baldwinsville, N. Y.

Col. R. R. McCormick in Montreal

MONTREAL, Que., September 26, 1932.—Col. R. R. McCormick, publisher of the *Chicago Tribune*, was in Montreal a few days ago, having just completed a visit to the timber preserves of this company in the Gulf of the St. Lawrence. He said all the men on the property would be kept at work, the mills would continue to run full time and the steamboat lines would operate to capacity.

WOOD PULP
AGENTS

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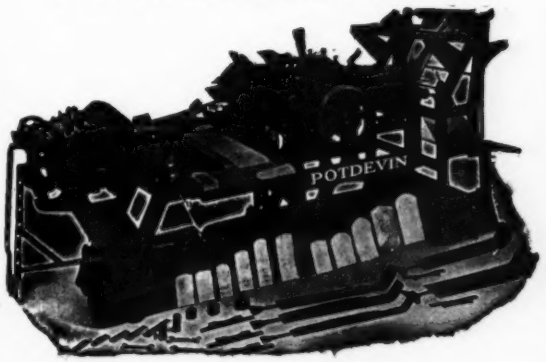

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, September 28, 1932.

BLANC FIXE.—The blanc fixe market is fairly active. Prices are generally holding to formerly quoted levels. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk; while the powder is selling at from 3½ cents to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—Paper mill demand for bleaching powder is restricted. The contract movement is fairly regular. Prices are holding to schedule, in most instances. Bleaching powder is quoted at from $1.75 to $2.00 per 100 pounds, in drums, at works.

CASEIN.—The casein market continues firm. Domestic standard ground is quoted at 6 cents and finely ground at 7 cents per pound. Argentine standard ground is still selling at 8 cents and finely ground at 8½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. The contract movement is normal. Solid caustic soda is still quoted at from $2.50 to $2.55; while the flake and the ground are selling at from $2.90 to $2.95 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is moderately active. Contract shipments are fairly heavy. Prices remain unchanged. Imported china clay is quoted at from $10 to $15 per ton, ship side; while domestic paper making clay is selling at from $5 to $12 per ton, at mine.

CHLORINE.—Conditions in the chlorine market are practically unchanged. The contract movement is fair. Prices are steadier than of late. Chlorine is quoted at $1.55 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—No radical changes were reported in the rosin market. The grades of gum rosin used in the paper mills are quoted at from $3.85 to $4.30 per 280 pounds, in barrels, at works; while wood rosin is selling at $2.80 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—The salt cake market is marking time. Prices are holding to schedule. Salt cake is quoted at from $15 to $16; chrome salt cake at from $12 to $13 per ton, in bulk, at works, while imported salt cake is selling at from $14 to $15 per ton, ship side.

SODA ASH.—Demand for soda ash from the paper mills is rather light. The contract movement is mainly seasonal. Prices are steady. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.00; in bags, $1.25; and in barrels, $1.38.

STARCH.—Most of the business transacted in the starch market during the past week was along routine lines. Prices are unchanged. Special paper making starch is quoted at $2.44 per 100 pounds, in bags; and at $2.71 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Trading in the sulphate of alumina market is fairly persistent. Prices are holding to schedule. Commercial grades are still quoted at from $1.25 to $1.40; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is rather quiet. Sulphur is quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts, and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—The talc market is exhibiting a fairly strong undertone. Prices are generally steady and unaltered. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at mine; while imported talc is selling at from $18 to $22 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@38.00
Bonds	4.50	@53.25
Index	6.00	@12.00
Writings—		
Extra Superfine	6.50	@15.00
Superfine	6.25	@14.75
Tub sized	4.50	@ 7.00
Engine sized	4.00	@ 5.00
Book, Cased—		
S. & S. C.	5.25	@ —
M. F.	3.75	@ 5.00
Coated and Enamel	6.25	@ 9.75
Lithograph	6.75	@11.25
Tissues—Per Ream—		
White No. 1	.50	@ .70
Anti-Tarnish M. G. only	.65	@ .70
Colored	.70	@ .90
White No. 2	.55	@ .60
Kraft	.65	@ .70
Manila	.55	@ .60
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.00	@ 5.25
No. 2 Wood	3.50	@ 4.00
Butchers	3.37½	@ —
Fibre Papers—		
No. 1 Fibre	4.25	@ 5.50
No. 2 Fibre	4.00	@ 4.75
Common Bogus	1.50	@ 3.00
Screenings	2.00	@ 3.00
Card Middies	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs., No. 1	.09¼	@ —
No. 2	.11¼	@ —
Bleached, basis 20 lbs.	.11¼	@ —

(Delivered New York)

News, per ton—		
Roll, contract	45.00	@ —
Rolls, spot	45.00	@ —
Sheets	58.00	@ —
Side Runs	38.00	@43.00
Kraft—		
No. 1 Domestic	4.75	@ 6.00
No. 2 Domestic	2.50	@ —
Southern	2.50	@ —
Imported	2.75	@ 3.50
Boards—per ton—		
News	30.00	@ —
Straw	32.00	@ —
Chip	30.00	@ —
Binders' Boards	62.00	@70.00
Kraft Liner	37.50	@ —
Standard 85 Test Liner	26.50	@ —
Sgl. Mla. Ll. Chip	37.50	@ —

(F. o. b. Mill)

Wood Pulp Boards	70.00	@80.00

Mechanical Pulp

(On Dock)

No. 1 Imported—		
Moist	18.00	@20.00
Dry	19.00	@21.00

(F. o. b. Mill)

No. 1 Domestic	16.00	@24.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	2.00	@ 2.90
Easy Bleaching	1.60	@ 1.75
No. 1 strong unbleached	1.40	@ 1.60
Mitscherlich unbleached	1.55	@ 1.75
No. 2 strong unbleached	1.25	@ 1.35
No. 1 Kraft	1.40	@ 1.65
No. 2 Kraft	1.30	@ 1.40
Sulphate—		
Bleached	1.85	@ 2.15

(F. o. b. Pulp Mill)

Sulphite (Domestic and Canadian)—		
Bleached	1.75	@ 3.75
Easy Bleaching	1.75	@ 1.90
News	1.50	@ 1.65
Mitscherlich	2.25	@ 2.55
Kraft (Domestic)	1.50	@ 2.75

(Delivered Paper Mills)

Soda Bleached	2.25	@ —

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	4.00	@ 4.25
New White, No. 2	3.00	@ 3.25
Silesias No. 1	3.75	@ 4.00
New Unbleached	5.50	@ 6.00
New Soft Blacks	2.75	@ 3.00
Blue Overall	3.00	@ 3.50
Fancy	1.50	@ 1.75
Washables	1.15	@ 1.40
Mixed Khaki Cuttings	2.50	@ 3.00
Pink Corset Cuttings	2.75	@ 3.25
O. D. Khaki Cuttings	3.00	@ 3.25
Men's Corduroy	1.00	@ 1.25
New Mixed Blacks	2.25	@ 2.50

Old Rags

White, No. 1—		
Repacked	3.00	@ 3.50
Miscellaneous	2.00	@ 2.25
White, No. 2—		
Repacked	1.75	@ 2.00
Miscellaneous	1.50	@ 1.75
Thirds and Blues—		
Repacked	1.50	@ 1.75
Miscellaneous	1.00	@ 1.25
Black Stockings	2.00	@ 2.25
Roofing Rags—		
No. 1	.53	@ .58
No. 2	.48	@ .53
No. 3	.43	@ .48
No. 4	.38	@ .43
No. 5A	.33	@ .38

Foreign Rags

New Rags

New Dark Cuttings	1.40	@ 1.50
New Mixed Cuttings	1.60	@ 1.75
New Light Silesias	3.00	@ 3.25
Light Flannelettes	2.50	@ 2.75
Unbleached Cuttings	4.75	@ 5.25
New White Cuttings	4.00	@ 4.25
New Light Oxfords	3.00	@ 3.25
New Light Prints	1.85	@ 2.25

Old Rags

No. 1 White Linens	5.25	@ 5.50
No. 2 White Linens	4.50	@ 4.75
No. 3 White Linens	3.25	@ 3.75
No. 4 White Linens	1.75	@ 2.25
No. 1 White Cotton	3.50	@ 3.75
No. 2 White Cotton	2.75	@ 3.25
No. 3 White Cotton	2.25	@ 2.50
No. 4 White Cotton	1.40	@ 1.50
Extra Light Prints	1.80	@ 2.00
Old. Light Prints	1.60	@ 1.75
Med. Light Prints	1.40	@ 1.55
Dutch Blue Cottons	1.35	@ 1.40
French Blue Linens	1.80	@ 1.90
German Blue Linens	1.70	@ 1.80
German Blue Cottons	1.20	@ 1.25
Checks and Blues	1.25	@ 1.30
Lindsay Garments	.75	@ .80
Dark Cottons	.70	@ .75
Old Shopperies	.55	@ .60
New Shopperies	.60	@ .65
French Blues	1.25	@ 1.30

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.00	@ 1.10
Domestic	1.15	@ 1.25
Wool Tares, light	.80	@ .85
Wool Tares, heavy	.80	@ .85
Bright Bagging	.75	@ .80
Small Mixed Rope	.80	@ .90
Manila Rope—		
Foreign	1.45	@ 1.50
Domestic	1.50	@ 1.75
New Burlap Cut	1.65	@ 1.75
Hessian Jute Threads—		
Foreign	2.60	@ 2.75
Domestic	2.80	@ 3.00

Old Waste Papers

(F. o. b. New York)

Shavings—		
White Envelope Cuttings	1.60	@ 1.70
Ordinary Hard White No. 1	1.35	@ 1.45
Hard White No. 2	1.25	@ 1.30
Soft White No. 1	1.30	@ 1.40
Flat Stock—		
Stitchless	.55	@ .65
Overissue Mag	.55	@ .65
Solid Flat Book	.50	@ .55
Crumpled No. 1	.35	@ .40
Solid Book Ledger	1.50	@ 1.75
Ledger Stock	.45	@ .55
New B. B. Chips	.20	@ .25
Manilas—		
New Env. Cut	1.25	@ 1.35
New Cuttings	1.00	@ 1.05
Extra No. 1 old	.80	@ .90
Print	.35	@ .40
Bogus Wrapper	.30	@ .35
Container	.25	@ .30
Old Kraft Machine—		
Compressed bales	.75	@ .85
News—		
No. 1 White News	1.05	@ 1.15
Strictly Overissue	.35	@ .40
Strictly Folded	.30	@ .35
No. 1 Mixed Paper	.15	@ .20

LOCKWOOD'S DIRECTORY

OF THE PAPER AND ALLIED TRADES

1932 EDITION

CORRECTED UP-TO-DATE

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Magnus SLIME REMOVER

Twines

(F. o. b. Mill)

Cotton—			
B. C., 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Finisned Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.11¾	@	.12¾
Tube Rope—			
4-ply and larger	.09¾	@	.11¾
Fine Tube Rope—			
4-ply	.11	@	—
3-ply	.12	@	—
2-ply	.13	@	—
Paper Makers Twine			
Balls	.08¾	@	.10¾
Box Twine, 2-3 ply	.07	@	.08
Jute Rope	.09	@	.10
Amer. Hemp, 6	.27	@	.29
Java Sisal—			
No. 1 Basis	.10	@	—
No. 2 Basis	.09	@	—
New Zealand Sisal	.10	@	—
Sisal Lath Yarn—			
No. 1	.12	@	.14
No. 2	.10	@	.12
Manila Twine	.23	@	.28

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.04	@	.11
Superfine Writing	.18	@	.24
No. 1 Fine Writing	.14	@	.18
No. 2 Fine Writing	.12	@	.14
No. 3 Fine Writing	.07	@	.18
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¼	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	3.50	@	4.50
Southern Kraft	2.62½	@	—
No. 2 Kraft	2.62½	@	—
Wood Tag Boards	.04¾	@	.06¾
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.07	@	.07¼
White Tissue	.07¼	@	.07½

(Delivered Central Territory)

News, per ton—			
Rolls, contract	53.00	@	—
Sheets	58.00	@	—
Boards, per ton—			
Plain Chip	30.00	@	35.00
Solid News	32.50	@	37.50
Manila Lined Chip	40.00	@	45.00
Container Lined—			
85 Test	50.00	@	55.00
100 Test	55.00	@	60.00

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.50	@	1.55
No. 1 Hard White	1.40	@	1.45
No. 1 Soft White	1.00	@	1.10
Ledger & Writings	.45	@	.55
Solid Books	.25	@	.30
Blanks	1.00	@	1.05
Krafts	.70	@	.80
New Kraft Cuts	1.15	@	1.25
Manila Env. Cuts	1.25	@	1.30
Ex. No 1 Manila	.90	@	1.00
Print Manila	.30	@	.35
Overissue News	.30	@	.35
Old Newspapers—			
No. 1	.25	@	.30
Mixed Papers—			
No. 1	.15	@	.20
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.04	@	.40
Ledgers	.06	@	.40
Writings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.26
Fine	.15	@	.26
Fine, No. 2	.10	@	.25
Fine No. 3	.05½	@	.18
Book, M. F.	.04¾	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06	@	.16
Coated Lithograph	.06	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.06	@	.09
Manila Sul., No. 1	.03	@	.05
Manila No. 2	.03	@	.04
No. 1 Kraft	.05¼	@	.06
No. 2 Kraft	.03¾	@	.04¼
Southern Kraft No. 1	—	@	.03¾
Southern Kraft No. 2	—	@	.02¼
Common Bogus	.03	@	.04

(Delivered Philadelphia)

News Print Rolls	58.00	@	62.00
Straw Board	50.00	@	—
News Board	22.00	@	25.00
Chip Board	21.00	@	23.00
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	73.00	@	75.00
No. 2, per ton	62.00	@	65.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1.	.03½	@	.04
New White, No. 2.	.02½	@	.04
Light Silesias	.02½	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft.	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01	@	.01½
Blue Overall	.03	@	.03½
Cottons—According to grades—			
Washable. No. 2	.01	@	.02
New Blue	.01	@	.02
Fancy	.01½	@	—
New Black Soft	.02	@	.03
New Light Seconds	.01	@	.02
New Dark Seconds	1.50	@	1.75
Khaki Cuttings—			
No. 1 O.D.	.03	@	.03½
No. 2 Mixed	.02¼	@	.03
Corduroy	.02	@	.02½
New Canvas	.03½	@	.04
New Black Mixed	.02½	@	.03

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.00
Miscellaneous	1.75	@	2.00
M. G.	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	1.00	@	1.25
Repacked	1.50	@	1.75
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.80

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	—
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	1.80	@	1.90
No. 2 Hard White	1.60	@	1.70
No. 1 Soft White	1.50	@	1.65
No. 2 Soft White	1.30	@	1.45
No. 1 Mixed	.40	@	.50
No. 2 Mixed	.35	@	.40
Solid Ledger Stock	1.00	@	1.10
Writing Paper	.80	@	.90
No. 1 Books, heavy	.55	@	—
No. 2 Books, light	.40	@	—
No. 1 New Manila	1.00	@	1.15
No. 1 Old Manila	.90	@	1.00
Print Manila	.40	@	—
Container Manila	.40	@	.45
Old Kraft	.85	@	.95
Common Paper	.15	@	.20
No. 1 Mixed Paper	.20	@	.25
Straw Board, Chip	.25	@	.35
Binders Board, Chip	.25	@	.35
Corrugated Board	.30	@	.35
Overissue News	.35	@	.40
Old Newspaper	.20	@	.25

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.05½	@	.11½
Rag Content	.12	@	.30
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04½	@	.05½
No. 2 Kraft	—	@	.02½

(F. o. b. Boston)

Southern Kraft	—	@	.02½

(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)

Common Bogus	.02	@	.02¼

(Delivered New England points)

News Print, rolls	—	@	52.50
Straw Board, rolls	.009	—	@35.00
Straw Board in Sheets, basis 35s to 70s	—	@	40.00
Filled News Board	—	@	30.00
Chip Board	—	@	25.00
Chip Board (Creasing)	27.50	@	30.00
Single Manila Lined Chip	—	@	37.50
Single White, Patent Coated News Board— Bender	45.00	@	55.00
Wood Pulp Board	70.00	@	75.00
Binder Boards	62.00	@	75.00

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Soft White	—	@	1.50
No. 1 Old Manila	.65	@	.75
No. 2 Mixed	.50	@	.55
No. 1 Mixed	.75	@	.85
Solid Ledger Books	1.20	@	1.40
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.60	@	.70
No. 1 Books, heavy	.50	@	.60
No. 1 Books, light	—	@	.30
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.55	@	.65
White Blank News	1.00	@	1.05
Kraft No. 1	.90	@	1.00
Manila	.80	@	.90
No. 1 Mixed Papers	.12½	@	.15
Print Manila	.30	@	.40
Overissue News	.35	@	.45
Old Newspapers	.27½	@	—
Box Board, Chip	.17½	@	.20
Corrugated Boxes	.17½	@	.22½
Screening Wrappers	.25	@	.32½

Bagging

(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.10	@	—
Domestic	.80	@	.90
Manila Rope—			
Foreign	1.40	@	1.50
Domestic	—	@	1.60
Transmission Rope	1.00	@	—
Mixing String	—	@	.30
Jute Rope	—	@	.75
Jute Carpet Threads	.25	@	.30
Bleachery Burlap	1.75	@	2.00
Scrap Burlap	.60	@	1.00
No. 1 Scrap Burlap	.80	@	.90
Scrap Sisal	.75	@	.85
Scrap Sisal for shredding	.90	@	1.00
Wool Tares, heavy	.65	@	.75
New Burlap Cutting	.75	@	.90
Australian Wool Pouches	—	@	1.50
Heavy Baling Bagging	.90	@	1.10
Paper Mill Bagging	.50	@	.60
Bagging No. 2	.20	@	.25
No. 1 Burlap	1.80	@	2.00

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	—	@	.01½
New White No. 1	.03¾	@	.04
New White No. 2	.02¾	@	.03¾
Silesias No. 1	—	@	.03
New Black Silesias	.02½	@	.02¾
New Unbleached	.05	@	.05¼
Fancy	—	@	.02½
Washable	—	@	.01¾
Cottons—According to grades—			
Blue Overalls	—	@	.03¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.03	@	.03½
O. D. Khaki	.03½	@	.03¾
Corduroy	.02¾	@	.03
New Canvas	—	@	.05
B.V.D. Cuttings	.04	@	.04¼

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.00	@	2.25
White No. 2—			
Repacked	.02¼	@	.02½
Miscellaneous	.02	@	.02¾
Twos and Blues	.90	@	1.00
Thirds and Blues—			
Repacked	.75	@	.85
Miscellaneous	.70	@	.75
Black Stockings	2.00	@	2.25
Roofing Stock—			
No. 1	.32½	@	.37½
No. 2	.30	@	.35
No. 3	.25	@	.30

Foreign Rags

(F. o. b. Boston)

Dark Cottons	.40	@	.50
New No. 1 White Shirt Cuttings	3.75	@	4.00
Dutch Blues	1.25	@	1.50
New Checks & Blues	2.25	@	2.50
Old Fustians	—	@	.75
Old Linsey Garments	.55	@	.65

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.10¼	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.10¾	@	—
No. 2 Colored	.09	@	.10½
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (Carloads)	6.65	@	—
No. 3 M. F. (Carloads)	6.20	@	—
No. 1 S. C. (carloads)	7.15	@	—
No. 3 S. C. (carloads)	6.65	@	—
No. 4 S. C. (carloads)	5.70	@	—
No. 1 Coated and Litho	12.50	@	—
No. 2 Coated and Litho	11.50	@	—
No. 3 Coated and Litho	10.00	@	11.50
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.40	@	—
White Wrap	3.00	@	—
"B" Manila	4.90	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.40	@	—

(Delivered Toronto)

News, per ton—			
Rolls (contract)	52.50	@	53.00
Sheets	57.50	@	—

Pulp

(F. o. b. Mill)

Ground Wood	18.00	@	20.00
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	48.00	@	58.00
Sulphate	55.00	@	—

Old Waste Paper

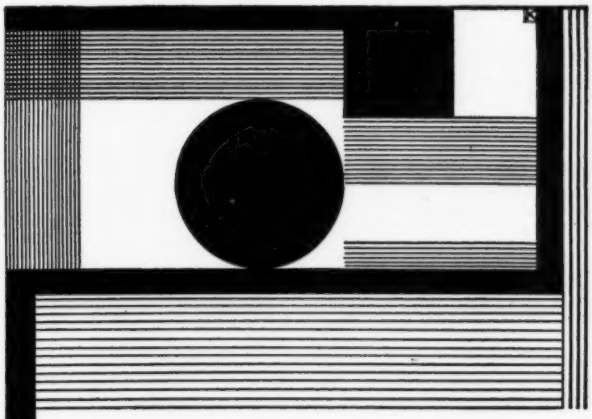
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	1.80	@	—
Soft White	1.40	@	—
White Blk. News	1.25	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	—
Light and Crumpled Book Stock	.80	@	—
Ledgers and Writings	1.00	@	—
Manilas—			
New Manila Cut	1.25	@	—
Printed Manilas	.55	@	—
Kraft	1.75	@	—
News and Scrap—			
Strictly Overissue	.50	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09½	@	.10
Fancy Shirt Cuttings	.06	@	.06¼



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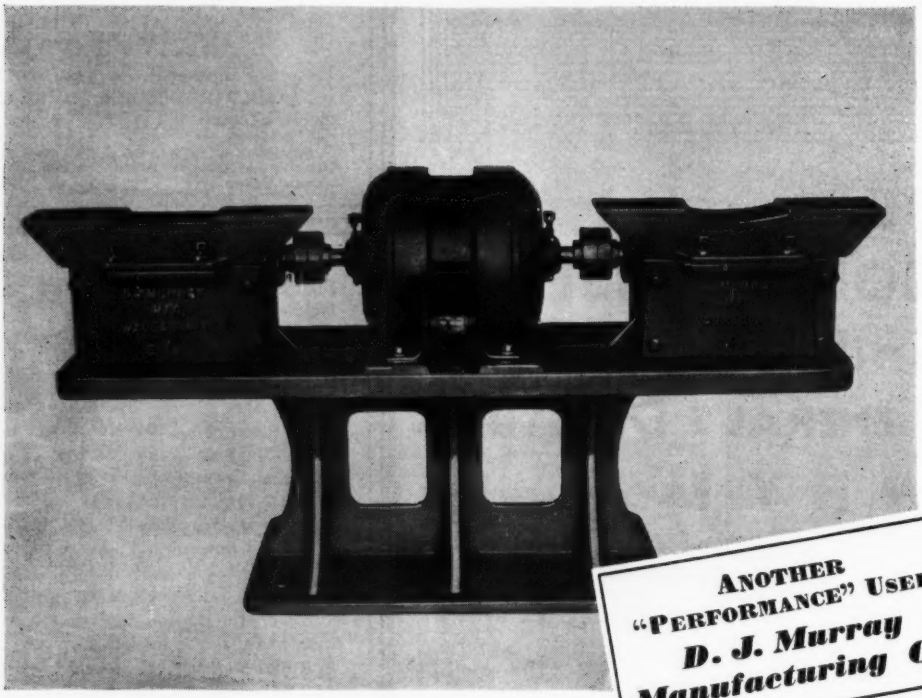

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